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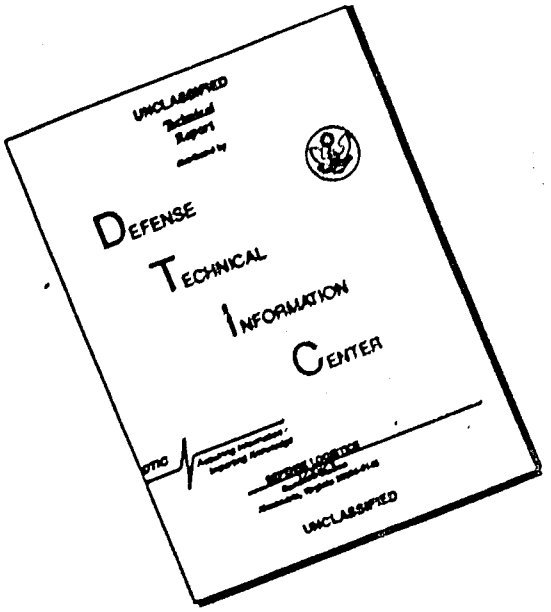

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TRAFFICABILITY OF SOILS

SOIL CLASSIFICATION

TECHNICAL MEMORANDUM NO. 3-240
SIXTEENTH SUPPLEMENT
August 1961
(Supersedes TM 3-240, 11th Supplement)

U. S. Army Engineer Waterways Experiment Station
CORPS OF ENGINEERS
Vicksburg, Mississippi

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TRAFFICABILITY OF SOILS

SOIL CLASSIFICATION

TECHNICAL MEMORANDUM NO. 3-240
SIXTEENTH SUPPLEMENT
August 1961
(Supersedes TM 3-240, 11th Supplement)

U. S. Army Engineer Waterways Experiment Station
CORPS OF ENGINEERS
Vicksburg, Mississippi

ARMY-MRC VICKSBURG, MISS.

PREFACE

The study reported herein was made to obtain information in furtherance of Corps of Engineers Research and Development Project 8S70-05-001, "Trafficability and Mobility Research," Subproject 8S70-05-001-02, "Surface Mobility (Trafficability)."

The study was performed by engineers of the Trafficability Section, Army Mobility Research Center, Soils Division, U. S. Army Engineer Waterways Experiment Station, under the general supervision of Messrs. W. J. Turnbull and C. R. Foster and under the direct guidance of Messrs. S. J. Knight and A. A. Rula. Part of the data used in this study was collected by the U. S. Forest Service and Purdue University, under contract to the Waterways Experiment Station. The data were analyzed and the report was written by Messrs. M. P. Meyer and S. J. Knight. Mr. N. H. Smith assisted in the compilation and analysis of data.

Col. Edmund H. Lang, CE, was Director of the Waterways Experiment Station during preparation of this report. Mr. J. B. Tiffany was Technical Director.

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SUMMARY

The study described herein consisted of a statistical analysis of the principal factors that influence soil trafficability and the application of the analysis to the development of a scheme for classifying soils under generally wet conditions in a temperate climate. The scheme developed is an improvement over the one reported in the 11th Supplement in this series of reports.* This report supersedes the 11th Supplement.

The original scheme was based on data from 321 sites; in the present scheme 1310 were considered. The former scheme recognized only the Unified Soil Classification System (USCS) for identifying soils; the present scheme also recognizes the U. S. Department of Agriculture (USDA) textural classification system. The first scheme considered the trafficability of soils under average wet-season conditions and ignored topographic position and water table. This scheme differentiates between average wet-season conditions (called simply "wet-season condition") and poorest trafficability conditions in the wet season (called "high-moisture condition") and considers topographic position and water table. The first scheme classified soils into four general trafficability groups; this scheme rates the trafficability of each soil type separately.

Although the scheme presented herein for classifying soils from a trafficability standpoint is considered to have exploited available data and knowledge to a maximum extent and is, therefore, the best available scheme to date, it is admittedly limited in scope. Some of the major limitations are: (a) the scheme considers only soils in humid, temperate climates; (b) it does not consider thawing or recently thawed soils, e.g. soils during the spring breakup; and (c) it does not attempt to describe the specific effects of certain environmental factors known to be important influences on soil trafficability, such as parent material, landform, land use, second-order climatic variations, and second-order soil textural variation. Initial attempts to quantify the effects of these environmental factors were temporarily abandoned when it was determined that valid data were not sufficiently numerous for statistical soundness. Collection of additional data and further analysis will be accomplished in the future.

The classification scheme presented in this report is essentially a listing of soil types (USCS and USDA) in decreasing order of median rating

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* Listed on back of front cover of this volume.

cone index. Means and ranges are shown for each soil type in high- and low-topography positions and at times of wet-season and high-moisture conditions. The probability of successful negotiation of a soil type by military vehicles can be ascertained by comparing vehicle cone indexes with the frequency distribution of rating cone index for the soil. Results of the various studies performed in developing the trafficability scheme are summarized as follows:

a. Under wet-season condition, USCS soils are rated in the following order from a trafficability standpoint (i.e. in order of decreasing trafficability): clean sands and gravels, sands and gravels with fines, highly plastic fine-grained soils, moderately plastic fine-grained soils, silty soils, and organic soils.

b. Under high-moisture condition, USCS soils are rated as follows: clean sands and gravels, highly plastic fine-grained soils, moderately plastic fine-grained soils, sands and gravels with fines, silty soils, and organic soils.

c. A general correlation between USCS types and USDA types for the same soils was found.

d. The USDA soil type in the 6- to 12-in. layer was the same as that in the 0- to 6-in. layer of the profile at 71% of the sites.

Two appendices, giving sources of and procedures used in obtaining the data used in the analyses, are included.

TRAFFICABILITY OF SOILS

SOIL CLASSIFICATION

PART I: INTRODUCTION

Background

1. The study reported herein is a part of an extensive investigation to develop (a) techniques and equipment that will enable reconnaissance parties to determine off-road soil conditions, and (b) a graphic means of presenting these conditions which will show field commanders the relation between vehicle mobility, soil type and moisture condition, and slope. This study consisted of a statistical analysis of the principal factors that influence soil trafficability, and the application of the analysis in developing a scheme for classifying soils under generally wet conditions in a temperate climate. The scheme developed is an improvement over that reported in the 11th Supplement in this series of reports,* also entitled Soil Classification, which it supersedes.

General Concepts

Present limitations of scheme

2. A soil trafficability classification scheme, if it is to be practicable, must first name or identify the soils according to some recognized system of soil classification, then establish trafficability limits for each soil type, and finally, if feasible, collect the various soil types into a small number of groups, each exhibiting a discrete trafficability behavior. The ideal scheme would be one that considered and evaluated all aspects of the environment (pedologic, geologic, hydrologic, physiographic, climatic, and vegetative) that affect the trafficability of the soil. The scheme reported herein, while it more nearly approaches the ideal than did the previous scheme (described in TM 3-240, 11th Supplement), considers the soil types under general space and time conditions in a temperate climate.

* Reports of this series are listed on the inside of the front cover of this volume.

Tropical soils, arctic soils, and soils during spring thaw will require separate treatment. Further refinement according to the environmental parameters mentioned previously must await the collection of additional data and further analysis.

3. Because clean sands and gravels are clearly the best soils from a trafficability standpoint they have been given a distinct place in the soil trafficability classification scheme, and have been excluded from the various statistical analyses that are presented in this report. For further information on the trafficability of sands, refer to WES TM 3-240, 15th Supplement.

Moisture references

4. Since it is generally true that every soil is trafficable when dry, and that every soil, with the possible exception of clean sand or gravel, can become untrafficable if sufficiently wet, it is necessary that some common moisture reference be employed if a classification scheme is to be meaningful. In the scheme developed herein, two general topography positions, termed "high topography" and "low topography," have been used with respect to space. Each position reflects a general water table condition of an area and thus a general moisture condition of the soil for a given time. "High topography" is assigned to a medium- to well-drained area of generally high topographic position where the water table always is more than 4 ft below the surface. "Low topography" is assigned to a poorly drained area of generally low topographic position where the water table lies 4 ft or less below the surface at some time during the year. Two common moisture references have been used with respect to time, a wet-season condition and a high-moisture condition. Wet-season condition refers to the average moisture condition of a soil during the period of the wet season. High-moisture condition refers to the time of approximately highest moisture content (lowest strength) of a soil.

5. The time and space terms are described in more detail in Part III. It can be shown statistically that the type of soil (clean sands and gravels excepted) will control the trafficability of an area under wet-season or high-moisture conditions. One soil type will exhibit a higher strength than a second type, which in turn will be more trafficable than a third, etc. Thus, relative ratings of trafficability by soil types

can be determined, and a classification scheme is feasible.

Soil classification systems

6. The soil trafficability classification scheme presented in this report may be considered a composite classification scheme because it uses two well-known systems of soil identification and is based on the moisture references mentioned in paragraph 4. The two soil classification systems used are the Unified Soil Classification System (USCS)[8*] and the U. S. Department of Agriculture (USDA) soil textural classification system. The USCS employs soil texture, plasticity, and organic content to name or type soils, whereas the USDA system is based solely on grain size. Because the USCS characterizes soils on the basis of their engineering behavior, and engineering behavior includes the reaction of soil to excavation, spreading, and rolling by construction equipment (closely analogous to trafficability operations), it is considered that the USCS-based trafficability scheme is the more reliable. However, since many areas are mapped in USDA terms or their foreign equivalents (and only a few in USCS terms), it was considered desirable to develop a scheme in USDA terms.

Purpose

7. The purpose of this study was to improve the soil trafficability classification scheme previously reported in the 11th Supplement in this series through analysis of additional data collected since development of the original scheme.

Scope

8. Data collected on coarse-grained soils with fines and on fine-grained soils during the period 1950-1958 were statistically analyzed in the development of the soil trafficability classification scheme. As noted previously, clean sands and gravels were assigned a distinct place in the scheme on the basis of their known excellent trafficability as compared to other soils; therefore, data on them were not subjected to statistical

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* Raised numerals refer to similarly numbered items in List of References at end of text.

analysis. Data used in the analysis were obtained from 1310 sites used in six different trafficability studies, including traffic-test, field-trip, prediction-development, survey, airphoto-trafficability, and high-water-table sites.* In the traffic-test program, data were collected from 36 natural-ground sites during the spring months of 1950 through 1953 for the purpose of determining the relations between vehicles and soils. In the field-trip program, 206 sites were each visited once during the springs of 1951 and 1953 to obtain information on the remolding effects of different soils. In the prediction-development program, data were collected frequently from 128 sites at various times from 1951 through 1954 for use in development of a means for quantitatively predicting daily moisture conditions of the surface soil. Data collected in the survey program at 618 sites in 1954 and 1955 were used to check the accuracy of soil-moisture prediction based on relations developed from prediction-development site data. Airphoto-trafficability data were obtained from 262 sites during the period 1950 through 1958 by the Engineering Experiment Station, Purdue University, under contract to the Waterways Experiment Station (WES), for use in a study to develop criteria for defining the trafficability characteristics of major landform environments from aerial photography.[5] Data for the high-water-table study were collected in 1957 from 60 sites for the purpose of obtaining information on soil strength under conditions of maximum wetting. Most of these data were collected in the United States during the wet season in humid, temperate regions; however, some of the data were obtained from soils in subhumid and arid temperate regions under high-moisture conditions.

9. The following studies, directly or indirectly pertinent to the improvement of the soil trafficability classification scheme, were conducted:

a. A mean and standard deviation analysis of strength, moisture content, density, and per cent saturation for high- and low-topography sites under wet-season condition, and for low-topography sites under high-moisture condition for soils in the 6- to 12-in. layer classified in USCS and USDA terms.

b. A cumulative frequency analysis of rating cone index for

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* These sites are discussed in detail in Appendix B.

high- and low-topography sites under wet-season condition, and for low-topography sites under high-moisture condition for soils in the 6- to 12-in. layer classified in USCS and USDA terms.

c. Study of USDA soil types classified in terms of USCS types for soils of the 6- to 12-in. layer.

d. Study of USCS soil types classified in terms of USDA types for soils of the 6- to 12-in. layer.

e. Determination of the degree of similarity between 0- to 6-in. and 6- to 12-in. layer soil types in terms of the USDA classification.

Previous Investigations

10. Much of the basic trafficability terminology and most of the site and soil data contained herein are included in the 3rd and 8th through 15th Supplements of the Trafficability of Soils series of reports listed inside the front cover of this volume, and in the series entitled Forecasting Trafficability of Soils, TM 3-331.[7] Some of the data are included in a series of reports written by personnel of the Engineering Experiment Station, Purdue University, under contract to WES during the period June 1951 to December 1957 under the general title, Application of Airphoto Pattern Analysis to Soil Trafficability Studies.[5] A summary report with the same title, written by Purdue University personnel and to be published by WES, contains most of the information and data included in the individual reports.

PART II: BASIC SOIL CLASSIFICATION SYSTEMS

11. The two soil classification systems, the USCS and the USDA, used in this study are briefly described in the following paragraphs.

Unified Soil Classification System (USCS)

12. The USCS is based on the identification of soils according to their textural, organic, and plasticity qualities, and on their grouping with respect to engineering behavior.[8] A condensation of the classification system is contained in table 1.

13. The soils are divided into coarse-grained soils, fine-grained soils, and highly organic soils. The coarse-grained soils may be subdivided into sands with fines, gravels with fines, clean sands, and clean gravels.

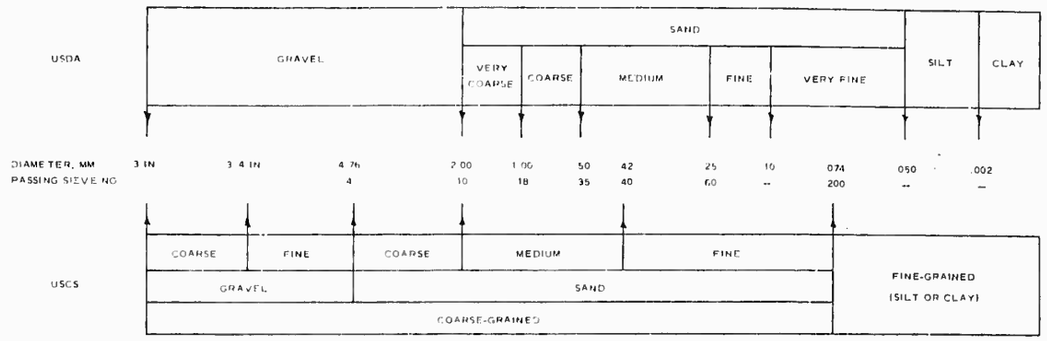
14. The soil types within the fine-grained and coarse-grained with fines groups are, for the most part, differentiated by their plasticity properties which are described in terms of moisture content limits, termed Atterberg limits. The limits, designated the liquid and plastic limits and the plasticity index, are defined in the 14th Supplement.

U. S. Department of Agriculture (USDA) Soil Classification

Textural classification system

15. The USDA system, utilized chiefly by the agronomist and soil scientist, is based on the identification of soils according to their texture. Texture is identified by the proportion of sand, silt, and clay in a sample. Limiting grain sizes corresponding to these three terms are shown in the following chart which also shows subdivisions under sand. Gravel includes sizes above 2.00 mm. The basic USCS soil names and corresponding sizes are shown in the lower half of the chart for comparison.

16. Four broad fundamental textural groups are recognized: sands, loams, silt, and clays. Soils containing more than 20% organic matter usually are classified as peat or muck if the mineral portion is silty or clayey. The sands, loams, and clays are subdivided into types based on



defined ranges of percentage of sand, silt, and clay. The textural composition of the four groups and the twelve basic types included within them are as follows:

a. Sands. Two specific types, sand (S) and loamy sand (LS), are recognized within this group.

b. Loams. The loam soils are heterogeneous mixtures of varying proportions of sand, silt, and clay. The predominant texture or textures are usually denoted by the first name or names, respectively, of the loam types, i.e. sandy loams have appreciable amounts of sand, and sandy clay loams appreciable amounts of sand and clay. Soil types within the group include loam (L), sandy loam SL), sandy clay loam (SCL), clay loam (CL), silt loam (SiL), and silty clay loam (SiCL).

c. Silt. This group is a type in itself. Comparatively few soils classify as silt.

d. Clays. The specific types in this group include sandy clay (SC), silty clay (SiC), and clay (C).

17. The type name may be modified by the textural terms "stony," "cobbly," or "gravelly," or by the grain size of sand (very coarse, coarse, medium, fine, or very fine).

18. Once the percentages of sand, silt, and clay are determined, the type name is established by reference to the textural classification triangle (fig. 1). Soils falling on a line between two types normally are denoted by the names of both types. For purposes of this study, however, such soils are gouped into the type having the greater percentage of silt or the smaller percentage of sand, i.e. the type that normally would be the more critical from a trafficability standpoint.

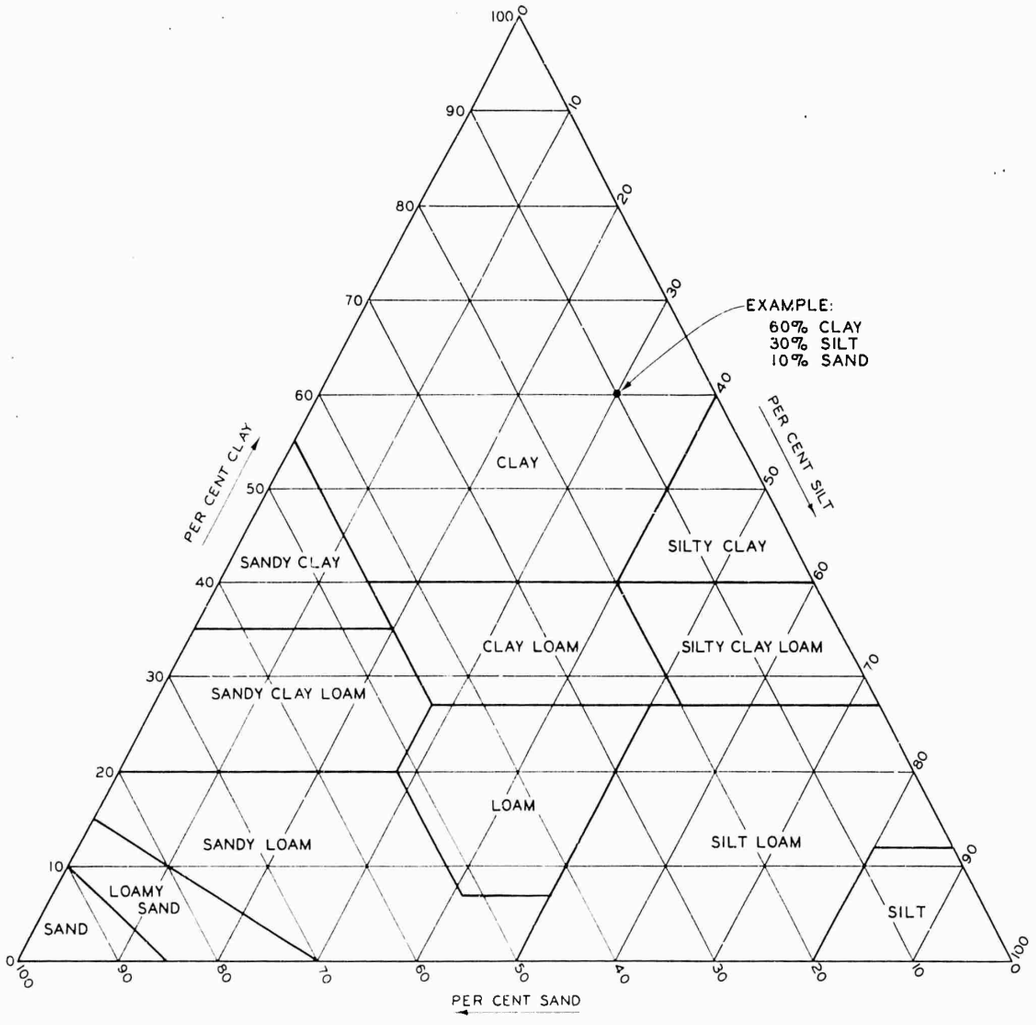


Fig. 1. USDA soil textural classification

Soil series

19. A soil series is a group of soils with similar characteristics and arrangement of soil horizons in the soil profile, except for the texture of the surface or "A" horizon. The soils within a series are developed from a particular type of parent material within a specific climatic environment, and are essentially homogeneous with respect to such features as slope, stoniness, degree of erosion, topographic position, and depth to bedrock. The series names are place names taken from the area where the soil was first defined, such as Miami, Hagerstown, Norfolk, and Houston. A soil series is normally subdivided into types based on the texture of the

surface or "A" horizon, which is the zone of organic accumulation and/or eluviation (mineral leaching). The type-textural name follows the series name, as Miami silt loam or Norfolk sand loam.

20. The Soil Conservation Service, U. S. Department of Agriculture, has been actively engaged in describing and mapping soil series areas of the United States. To date, approximately 4000 series have been distinguished and many areas, especially agricultural areas, have been mapped in units of these series. Information usually contained in the detailed description of the series includes the texture, color, structure, and range of thickness for each horizon within the profile; range in variation of soil characteristics; topography; external and internal drainage and permeability characteristics; typical and predominant vegetation; land use; and geographic distribution.

21. The wealth of environmental information implicit in a soil series name suggests that use of soil series names would provide a more accurate trafficability classification scheme than one based on texture alone. Unfortunately there was not sufficient soil series information in the data available to warrant the development of such a system at this time. Also there was no knowledge of the variation in trafficability which might be expected in a given soil series. Studies are presently being conducted by the Forest Service, USDA, in cooperation with WES, to determine the horizontal and vertical variations of soil properties and strength characteristics for four different soil series areas in the vicinity of Vicksburg, Mississippi. The results of these and future studies in other soil series areas will determine the feasibility of using soil series descriptions to interpret trafficability conditions.

PART III: TRAFFICABILITY FACTORS AND THEIR MEASUREMENT

22. Trafficability is defined as the capacity of a soil to withstand traffic by vehicles. It is an important aspect of cross-country movement which may be defined as the ability of terrain and environment to permit the movement of vehicles. The factors that influence cross-country movement are numerous. They not only include the many variables which combine to determine the strength and other physical properties of soils, but also include slope and other natural obstacles such as drainageways, scarps, dense vegetation, and microrelief features, as well as man-made obstacles such as railroad embankments, canals, etc. Investigations conducted by WES thus far have been limited to the trafficability of level and sloping soils and have not considered obstacles.

Soil Strength

Factors influencing strength

23. The principal factor affecting the trafficability of a soil is its shear strength. Physical soil properties that influence the shear strength of a soil include moisture content, grain size, grain shape, mineralogical composition, organic content, plasticity, and density. There is also evidence that environmental conditions play an important part in the existing soil strength. From laboratory studies of soils molded at a given moisture content and then soaked to produce a higher moisture content, it is known that the strength after soaking is influenced to a very large degree by the molding moisture content. Thus, the existing strength of natural soils is probably influenced by the specific conditions that prevailed during formation or deposition of the soil, and by subsequent cycles of wetting and drying, dessication by vegetation, and all the other environmental influences, such as natural cementing agents, that served to bring the soil to its present condition. The relative significance of each of these factors is difficult to evaluate since one factor may influence another in numerous combinations of interrelations.

Strength measurements

24. Cone index (CI). The shear strength of a soil is evaluated for

trafficability purposes by means of a cone penetrometer. This instrument employs a right 30-degree circular cone which has a base end area of 1/2 sq in. The force necessary to push the cone slowly through the soil is indicated by a dial that ranges from 0 to 300. The value 300 occurs under a force of 150 lb. The measured value, a dimensionless number termed cone index, is used as an index of soil strength (see 14th Supplement).

25. Remolding index (RI). When traffic is applied to a moist or wet soil in its natural condition, the soil is remolded and its strength usually is changed. Remolding tests, one for fine-grained soils and another for poorly drained, coarse-grained soils with fines, have been devised that will permit an estimate of the magnitude and direction of these strength changes. The tests yield a remolding index which expresses the proportion of original strength that will be retained under traffic. The test equipment is described in detail in the 14th Supplement; the procedures for the two remolding tests are discussed in paragraph 3, Appendix A.

26. Rating cone index (RCI) and vehicle cone index (VCI). The rating cone index is the product of the cone index and the remolding index, and expresses the probable strength of the soil under a moving vehicle. The minimum CI required for 50 passes of a specific vehicle is called its vehicle cone index. If the RCI of a soil is higher than the VCI of a particular vehicle, 50 such vehicles can be expected to travel successfully in the same straight-line path, or one vehicle can be expected to execute severe maneuvers without becoming immobilized.

Soil Bearing and Traction Capacities

27. Bearing and traction capacities are primarily functions of strength (or shearing resistance) of a soil. Bearing capacity is the ability of a soil to support a vehicle without undue settlement; traction capacity is the ability of a soil to provide sufficient resistance between the moving wheel or track of a vehicle and the soil for the necessary thrust to move the vehicle forward. The trafficability of a soil is considered adequate for a given vehicle if the soil has sufficient bearing capacity to support the vehicle and sufficient traction capacity to enable the vehicle to develop the forward thrust necessary to overcome its rolling

resistance. When the rolling resistance is equal to or greater than the forward thrust, the vehicle becomes immobilized.

Soil Slipperiness and Stickiness

28. Two other soil properties, slipperiness and stickiness, affect the operation of a vehicle. Slipperiness is a condition of deficient traction capacity in a thin surface layer of a soil which is otherwise trafficable. A vehicle immobilized solely because of slipperiness spins its wheels or tracks but neither moves forward nor sinks excessively. Stickiness is the ability of soils to cling to and build up on the running gear of vehicles. When this happens, the rolling resistance of the vehicle is increased and steering becomes more difficult. In extreme cases, stickiness can produce enough rolling resistance to "freeze" the running gear of a vehicle.

Critical Soil Layer

29. Correlations between vehicle performance and soil strength are most consistent when the strength in the critical layer is considered. For most Army vehicles, in an area with a normal soil profile (cone indexes increase or remain constant with depth) the critical layer is that between the 6- and 12-in. depths. Detailed procedures for determining the critical layer for very light or very heavy vehicles in normal and abnormal profiles are described in the 14th Supplement. The analyses and trafficability classification scheme described herein are based on soils data from the 6- to 12-in. layer.

Soil Moisture

30. The principal factor influencing the strength of a given soil is its moisture content. Any soil in a comparatively dry state may be trafficable to all military vehicles; but at a higher moisture content, its strength, and consequently trafficability, may be such that only certain vehicles can pass. At even higher moisture contents the soil may be

untrafficable for all vehicles. It is apparent that moisture conditions must be taken into account in any evaluation of the trafficability of soils and, further, that soils must be at similar or equivalent conditions of moisture in order that they can be rated fairly in comparison with each other.

31. Moisture is added to the surface soil through precipitation, a rising water table, flooding, irrigation, melting of snow, or thawing of frozen ground. Moisture is generally depleted from the surface soil by runoff, gravitational percolation, evaporation, or transpiration through plants. The rate and magnitude of moisture gain or loss and the capacity of the soil to hold water are controlled not only by the above-listed physiographic, hydrologic, and climatic environmental factors, but also by the porosity and permeability characteristics of the soil. These latter characteristics, for the most part, are determined by the plastic, organic, and textural properties of the soil that are defined in terms of the USCS and the USDA soil classification system.

Soil-moisture terms

32. The soil-moisture terms used in this report are defined as follows:

a. Field capacity. The field capacity may be defined as the amount of water held in a soil with adequate opportunity for drainage after the excess gravitational water has drained away, and after the rate of downward movement of water has materially decreased. The moisture-content value at 0.06-atmosphere tension, defined below in subparagraph e(1), is sometimes used to approximate field capacity.

b. Per cent saturation. Per cent saturation is commonly defined as the ratio, in percentage, of the volume of water in a given soil mass to the total volume of intergranular space (voids). A soil is theoretically 100% saturated when its total pore space is completely filled with water. This condition, however, seldom occurs in nature because air is trapped in the voids.

c. Field-maximum moisture content. The field maximum is the naturally recurring, average highest moisture content of a soil layer in its natural position. The field-maximum moisture contents of the 6- to 12-in. soil layer normally are greater than field capacity and approach saturation at low-topography sites, and are generally slightly greater than or at field capacity at high-topography sites.

d. Field-minimum moisture content. The field minimum is the

naturally recurring, average lowest moisture content of a soil layer in its natural position. It occurs frequently during the dry season, but is seldom reached during the wet season in humid climatic areas.

e. Moisture tension. The moisture tension is defined as the force, or tension, by which water is held to the soil surface or within interstices. The tension for a specific soil varies inversely with its moisture content. The moisture content-tension relation for a particular soil is determined by means of a laboratory tension-table device at a sequence of tension, or pressure, settings. At a given moisture content, the tension is equal to the negative or gage pressure to which free water in the instrument has been subjected in order to be in hydraulic equilibrium, through a permeable wall or membrane, with the water in the soil. The tension values considered in this report include the following:

(1) 0.06-atmosphere tension (60 cm water). The moisture content at this tension value is sometimes used either to approximate the field capacity of soils or to estimate the field-maximum soil-moisture content of sites classified as high topography wherein water tables are more than 4 ft below the surface.

(2) 0.005-atmosphere tension. The moisture contents at this tension are close to saturation moistures for fine-grained soils, and are approximately equal to field-maximum soil-moisture contents of low-topography sites where the water table is less than 1 ft below the surface.

(3) 0-atmosphere tension. The moisture contents of soil samples at 0-atmosphere tension are determined in the laboratory using the same equipment and technique employed in determining the moisture content-tension relations noted above, except that tension is not applied to the sample. For a given soil, the moisture value at 0-atmosphere tension, as would be expected, is slightly greater than the value at 0.005-atmosphere tension, and is very close to the saturation moisture content (discussed in paragraph 15, Appendix A).

Climate and season

33. Climate must be considered in any type of soil-moisture analysis. The principal elements of climate consist of precipitation, temperature, atmospheric humidity and pressure, and wind velocity. Of these, precipitation and temperature are the two most important factors controlling the gain and loss of soil moisture. Similar soils within a specific climatic area will have qualitatively similar seasonal soil-moisture conditions; and, conversely, similar soils of different climates will have

dissimilar seasonal soil-moisture conditions. Soils in humid climatic areas, for example, generally have higher moisture contents than soils in arid climatic areas because of the difference in the amount of precipitation.

34. For purposes of this study wet and dry seasons are considered, based on the qualitative moisture conditions of the soil. The wet season is defined as the period of the year when generally high soil-moisture contents prevail; it does not necessarily correspond to the period of maximum precipitation. The dry season is defined as the period of generally low soil-moisture contents, although maximum moisture contents may occur for short periods during and immediately after heavy rainfall. Moisture studies conducted at specific sites (prediction-development) in various sections of the United States for continuous periods of at least one year (discussed in paragraphs 12-23, Appendix B) have been used to develop a system for predicting the effects of meteorological factors on the trafficability of soils.[7e] The studies show, among other things, that the top 12 in. or so of soils at sites in humid temperate climatic regions attain relatively high moisture contents in the late autumn months and, as a result of low evapotranspiration losses, maintain these moisture contents with relatively little deviation through the winter and early spring months. Transpiration is negligible because most plants are dormant or dead and require very little or no water, and evaporation to the atmosphere is small because of the normally cool or cold weather. The temporal limits of the wet season vary geographically and with local and regional microclimate.

35. Thornthwaite has developed a method for determining the ground moisture conditions based on precipitation and evapotranspiration for particular climatic environments.[6] In his scheme the nonfrozen ground conditions are classified into five categories: W (wet), MM (very moist), M (moist), D (dry), and DD (very dry). In W, MM, and M conditions the soil has a water surplus and the moisture content of the root zone is greater than field capacity; in D and DD conditions the soil has a water deficiency and the moisture content of the root zone is less than field capacity. These conditions and those of frozen and snow-covered ground are shown on monthly maps of the United States in Thornthwaite's report.

In order to provide an estimate of temporal and spatial limits for wet-season conditions in this study, the information from the Thornthwaite maps has been incorporated into a single map of the United States showing the distribution and months duration of wet-season conditions (fig. 2). The W, MM, and M ground conditions occurring between November and May were assumed to be wet-season conditions with the following exception: the last month of the wet season is transitional to the dry season and some low-topography areas and most high-topography areas can be considered to be under dry-season conditions for this time. W, MM, and M ground conditions shown by Thornthwaite in months other than the period November through May were assumed to be dry-season conditions. Areas in which Thornthwaite showed no W, MM, or M conditions for any month of the year were assumed to be areas with no wet season. In the northern tier of states, months omitted from the range are periods of predominantly frozen or snow-covered ground conditions.

Space and time factors affecting soil-moisture content

36. The moisture content of a soil at a site depends significantly on the topographic position and water-table level (drainage features) and the general precipitation-evapotranspiration balance at the time the site is investigated. Take, for example, a large area of essentially the same soil type consisting of hills and drainageways or valleys. (The loessial deposits in the vicinity of Vicksburg, Mississippi, constitute such an area. Whether at the top of a ridge or at the bottom of a drainageway, examination shows that the soil in the top foot is a silt loam (SiL) in USDA terms and a lean clay (ML) in USCS terms.) Suppose that this area had sustained a heavy rainfall during the wet season, when soil-moisture and water-table levels are generally high (evapotranspiration low). Following this rainfall, a test of the trafficability conditions on a transect through the area would show that the low-lying, poorly drained sites with water tables close to the surface had very poor trafficability, that better drained low-lying areas with deeper water tables had somewhat better trafficability, and that, in fact, trafficability improved directly with improvement in topographic position and drainage characteristics, until on ridgetops trafficability was excellent. It is obvious that a

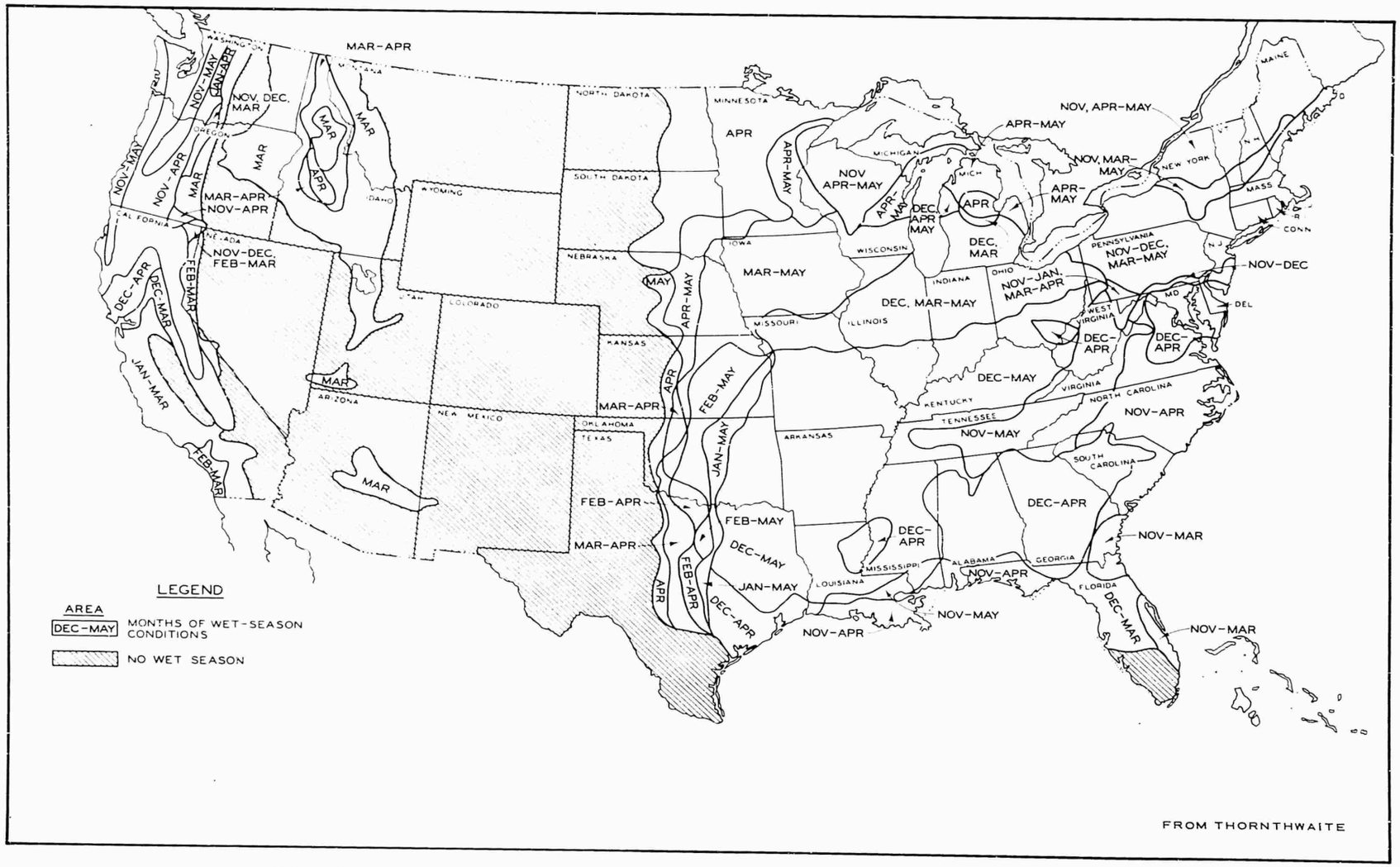


Fig. 2. Distribution and months duration of wet-season conditions

classification of the trafficability of this soil type would have to be "very poor to excellent," and would therefore be of little value from a practical standpoint. Similarly, suppose a rain fell during the dry season, when soil-moisture and water-table levels were generally low (evapotranspiration high). A few very poorly drained sites might be brought to a very poor trafficability condition and ridgetops would still enjoy excellent trafficability. Again one would have to say that trafficability varied from very poor to excellent, even though site for site, the trafficability under the latter assumption was generally much better than under the former.

37. In order to estimate the trafficability of a site more accurately, consideration must be given not only to its soil type but to its topographic position, and to its general relative moisture-content level. From a study of the data available, certain arbitrary "space" and "time" factors have been designated. These are considered essential for optimum accuracy in estimating trafficability on the basis of existing knowledge and available data. Additional data and further study may produce more explicit criteria for estimating the trafficability at a site. However, at the present time, two space factors, low and high topography, and two time factors, wet-season and high-moisture conditions, will be used. These are illustrated in fig. 3 and explained in the following paragraphs.

38. Space factors. The depth to the water table has been found to be a significant factor in determining how wet a site may become. Sites which have a water table within 4 ft of the surface become wetter in the top foot than do sites with the water table below the top 4 ft, even though all other conditions appear to be the same.

a. Low topography. A site of low topography is one at which a water table is known to exist within 4 ft of the surface, perennially or at some time during the year. Such sites usually occur as bottomlands, lower terraces, depressions, or bottoms of slopes, or occasionally as upland flats associated with impervious subsurface layers or pans. They are generally characterized by poor to fair external drainage and moderately poor to very poor internal drainage. If the water table is actually observed at depths of less than 4 ft from the surface at a site at least once, the site automatically qualifies as a low-topography site. If observed data on water-table depth are not available, sites which appear, from observation or from soil series descriptions,

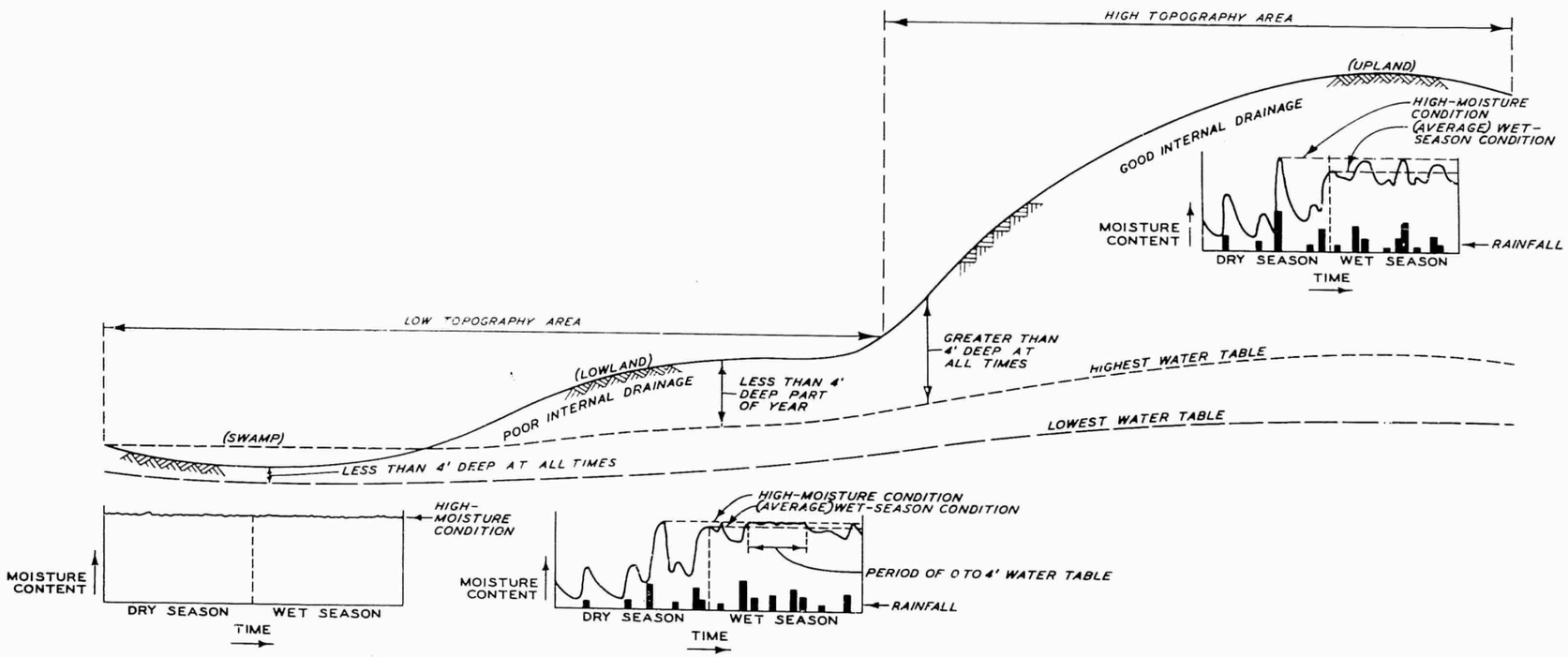


Fig. 3. Profile of a typical area showing various topography-moisture conditions during year

likely to have high water tables on the basis of their topographic position, drainage characteristics, proximity to surface water bodies, or soil coloring (gray or blue mottled soils usually indicate the presence of a consistent water table) are judged to be low-topography sites.

b. High topography. Sites of high topography have water tables at depths greater than 4 ft from the surface at all times. These sites are characterized by soils with no impervious layers or pans and moderate to good internal and external drainage. They are usually located on ridges or upper slopes. If information on water table is not available, it is usually possible to determine when a site is one of high topography through a study of the topographic position and other environmental data available.

39. Time factors. While, for this study, it would have been desirable to have examined the means and ranges of pertinent soil values measured at a time when the moisture content was at rigorous reference levels, such as field maximum or field capacity, this was not feasible because only a few sites were known to have been tested when the moisture content was at these levels. In order to realize the benefit of values derived from large masses of data, the less rigorous moisture levels, wet-season condition and high-moisture condition, were selected. These conditions, or time factors as they are called in this report, are discussed in the following subparagraphs.

a. Wet-season condition. The wet-season condition is intended to represent the average condition prevailing in soils during the wet season. In effect, it probably represents slightly wetter-than-average conditions, because data were obtained from some sites visited only once, specifically during a time of very wet moisture conditions, and because data from some of the drier sites were not utilized. The drier sites were usually visited only once or just a few times. At many of these sites, it was not possible to obtain a sample for the remolding test. Since remolding index (and therefore rating cone index) could not be determined for such sites, the other parameters, cone index, moisture content, and density, were not used for averaging. This treatment of the data permits straightforward comparisons of cone index, remolding index, rating cone index, moisture content, and density within a soil type. Exclusion of data from drier sites tended to bias the averages toward the wet end, and inclusion of data from the wetter sites strengthened this bias.

b. High-moisture condition. The high-moisture condition represents the worst trafficability condition that can occur at

sites that undergo seasonal changes. (Marshes, bogs, swamps, and other perennially wet, soft, spongy areas are prime examples of low-topography areas under high-moisture condition at all times.) Low-lying areas with fluctuating water tables and upland areas with seasonal perched water tables are typical examples of low-topography areas where high-moisture condition occurs intermittently. Low- and high-topography areas that have been subjected to moderate or heavy rainfall are normally under high-moisture condition during and immediately following the rainfall. In this study high-moisture condition at high-topography sites could not be identified from the collected data. Consequently, an analysis was not made for this topography-moisture condition and the classification scheme does not include data for this category. Only one set of high-moisture data (cone index, remolding index, rating cone index, and moisture content) was used in the analysis for a given low-topography site. At sites where high-moisture data were collected on more than one day, the set of data selected was for the day of lowest rating cone index. The moisture content for this day was usually, but not necessarily, the highest recorded at the site. The per cent saturation at high-moisture condition for all low-topography sites except those of the survey sites was based upon the moisture content of this day. The per cent saturation data for the survey sites was based on laboratory-determined moisture content at 0-atmosphere tension. In analyzing the data, a high-moisture condition was considered to have been prevalent at a low-topography site when it was known that the water table was within the top 4 ft of a fine-grained soil or within the top 2 ft of a coarse-grained soil with fines. If the precise elevation of the water table was not known a high-moisture condition was assumed to have prevailed if:

(1) The measured field moisture content was not more than 1% less than the laboratory-determined 0-tension moisture content for the site. This criterion was used for survey sites of low topography at which no water-table measurements were made.

(2) The measured moisture content was slightly less than, equal to, or greater than the field-maximum moisture content. This criterion was used for prediction-development sites of low topography at which no water-table measurements were made.

(3) The per cent saturation was greater than the per cent saturation mean of the soil type minus one standard deviation. This criterion was used for traffic-test and field-trip sites of low topography at which no water-table measurements were made and for all airphoto-trafficability sites of low topography. The

data for a few field-trip sites located next to streams and with exceptionally low rating cone index values were also included under high-moisture condition even though the per cent saturation was a few per cent below one standard deviation from the mean of the soil type. The data used in the per cent saturation analysis were derived from low-topography sites assumed to be under high-moisture condition based on conditions discussed above, or because of the site's proximity to a water body, or because it was tested during or immediately after a period of heavy rainfall. The statistical values for this assumed high-moisture condition approximate those obtained in the final analysis of per cent saturation discussed in paragraph 72.

Slope

40. Vehicles that can traverse certain soils on level surfaces often become immobilized when climbing slopes on similar soil conditions. These immobilizations can be attributed primarily to a downhill force, a function of the vehicle's weight and the angle of slope, which opposes the vehicle's forward thrust.

41. In this report slope is expressed in terms of per cent (vertical rise divided by horizontal distance multiplied by 100).

Slope index

42. The adverse effect of slope on vehicle performance can be expressed by an increase in rating cone index requirements above the vehicle's requirements for level terrain. These excess RCI points, called slope index, may be added to the vehicle cone index and the determination of "go"* or "no go" is made by comparing this value with the measured RCI. Detailed procedures for determining slope effects and for estimating the maximum slopes negotiable for various vehicle types are described in the 8th and 14th Supplements. Three slope index values, one for tracked vehicles with grousers longer than 1-1/2 in., another for tracked vehicles with grousers shorter than 1-1/2 in., and the third for wheeled vehicles, can be obtained for a given slope from the three respective curves shown

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* In this report "go" means that 50 vehicles can pass in careful straight-line traffic or one vehicle can execute severe maneuvers without becoming immobilized.

in plate 1. If, for example, the slope is 30%, the slope indexes for the three vehicle classes would be 13, 15, and 20, respectively.

Effective rating cone index (ERCI)

43. The ERCI is a combined soil strength-slope value which rates the trafficability of a sloping soil. The index is computed by subtracting the slope index from the rating cone index. For example, if the RCI of a soil is measured to be 50 and the slope is 30%, the ERCI would be 50 minus 13 or 37 for tracked vehicles with grousers longer than 1-1/2 in.; 50 minus 15 or 35 for tracked vehicles with grousers shorter than 1-1/2 in.; and 50 minus 20 or 30 for wheeled vehicles. The determination of "go" or "no go" on sloping terrain is based on comparison of the vehicle cone index with the ERCI for the vehicle class. If the VCI is greater than the ERCI, vehicles of this type will not be able to climb the slope; if the VCI is less than the ERCI, the slope is considered negotiable. The ERCI can also be applied and, if desired, mapped in regard to level terrain. In this case, the slope index is zero for all vehicle classes and the ERCI is equal to the RCI of the soil.

PART IV: ANALYSIS OF DATA

Types of Analyses Made

44. The following studies of direct pertinence to the main purpose of this report, improvement of the soil trafficability classification scheme, are described in this part of the report.

a. A statistical study of the occurrence of strength, moisture content, density, and per cent saturation in the 6- to 12-in. layer of soils, classified in both USCS and USDA terms, under wet-season condition for low-topography, high-topography, and all sites (includes high- and low-topography sites), and under high-moisture condition for low-topography sites.

b. A cumulative frequency analysis of rating cone index in the 6- to 12-in. layer of soils, classified in both USCS and USDA terms, under wet-season condition for low- and high-topography sites and under high-moisture condition for low-topography sites.

45. In addition, three studies closely related to the classification scheme are described. The studies are:

a. Determination of the frequency of USDA soil types classified in terms of USCS types for soils of the 6- to 12-in. layer.

b. Determination of the frequency of USCS soil types classified in terms of USDA types for soils of the 6- to 12-in. layer.

c. Determination of the degree of similarity between 0- to 6-in. and 6- to 12-in. soil layers in terms of the USDA classification.

Basic Data

46. The data used in the above-listed studies were derived from six sources. The number of sites for each source and the number of sites which provided data for each of the studies are shown in the following tabulation. The sources of data are discussed in Appendix B, locations of sites are shown in fig. B1, and data are presented in tables B1 through B6.

Data Source	No. of Sites in Table	Number of Sites Used in Analysis of Mean and Standard Deviation: Wet-Season Condition: CI RI RCI*	Wet-Season Condition: Moisture Content	Wet-Season Condition: Density	High-Moisture Condition: CI RI RCI*	High-Moisture Condition: Moisture Content	High-Moisture Condition: % Saturation	Comparison of: USCS with USDA Soils	Comparison of: 0- to 6-in. with 6- to 12-in. USDA Soils
Traffic-test sites	36	34	34	30	27	27	23	27	11
Field-trip sites	206	150	178	167	103	102	99	169	167
Prediction-development sites	128	68	67	64	23	22	11	128	128
Survey sites	615	360	379	379	111	103	55	618	618
Airphoto-trafficability sites	202	6	61	56	19	16	11	194	196
High-water-table sites	60	3	4	0	36	27	30	40	30
Total	1311	661	724	696	319	297	229	1176	1140

* The rating cone index (RCI) values were also used in analysis of cumulative frequency of rating cone index.

Statistical Study of Strength, Moisture Content, and Density Under Wet-Season Condition

Procedures and presentation of data

47. This study establishes the statistical mean and standard deviation values of strength parameters (cone index, remolding index, and rating cone index), moisture content, and density for soils in the 6- to 12-in. layer under wet-season condition. Values were computed for low- and high-topography sites and all sites (high- and low-topography sites combined) for each of the soil types in the USCS and USDA systems, respectively. The data are presented in tables 2-6. The USCS soil types are arranged from top to bottom and the USDA soil types from left to right in order of decreasing mean rating cone index for all sites under wet-season condition (table 4). The same order of soil types is used for the cone index, remolding index, moisture content, and density tabulations (tables 2, 3, 5, and 6, respectively). The summary data for given soil types are also shown as histograms in plates 2-6. The first three bar graphs in the histogram for each soil type represent high topography, all sites, and low topography, under wet-season condition, respectively; the fourth bar graph represents low topography under high-moisture condition (discussed in

paragraphs 67-72). Each bar shows the range from +1 to -1 standard deviation. The mid-point of the bar is the mean value, and the number of samples (sites) used in the analysis is shown at the top of the bar.

48. The data used in these analyses were obtained from 767 sites in 41 states generally located in the humid, temperate regions of the United States. Some of the data were derived from sites located in subhumid or arid climatic areas wherein moisture contents were similar to wet-season moisture contents in the humid, temperate regions.

49. The IBM 650 computer was employed in this and in the high-moisture condition study. Two IBM data cards were used for each site. The first card tabulated the USCS and USDA types and the topography by code number, and listed the wet-season condition values for strength, moisture content, and density. The second card repeated the tabulations of USCS and USDA types and topography; noted by code number the site number, location by state, and type of study the site was used in; and listed the high-moisture condition strength and moisture-content values for each low-topography site.

50. The data were analyzed in terms of mean and standard deviation because these are probably the most widely used and most readily understood statistical measures. The mean (commonly termed arithmetic mean or average) is computed by summing the individual measurements and dividing by the total number of measurements. The standard deviation is a measure of the dispersion of the data around the mean. The standard deviation (s) for less than 30 measurements was computed by means of the formula

$$s = \sqrt{\frac{\Sigma(x - \bar{x})^2}{n - 1}}$$

where Σ = the sum of

$(x - \bar{x})$ = the deviation of an individual measurement from the mean of all measurements

n = the number of measurements

(The -1 may be omitted from the denominator of the formula if more than 30 measurements are used in the computation.) When the number of measurements for the specific condition exceeds 30, the interval defined by +1 and -1 standard deviation from the mean will usually contain approximately 68% of

the data; or assuming the data are universally valid, if three additional measurements were taken, the values of two would usually fall within this interval. Mean and standard deviation values of a condition with less than 30 measurements, and especially of a condition with less than 5 measurements, should be viewed with skepticism.

51. The histograms in plate 5 show that mean moisture contents for a given soil type are generally highest under low topography, high-moisture condition and lowest under high topography, wet-season condition, and the mean moisture content for low topography, wet-season condition is properly arranged. If data had been developed for high topography, high-moisture condition, the mean moisture content would probably lie between those for low topography, wet-season condition, and low topography, high-moisture condition. This consistent pattern for all soil types (except USCS type SC and USDA sandy clay loam (SCL)--see paragraph 63 for discussion) is presumed to be evidence in support of the proper identification of site data into the four arbitrary space-time categories used in this report.

Analysis of strength

52. Cone index. The results of the analysis of CI are given in table 2 and the summary data for each soil type-wetness condition are shown graphically in plate 2. The following tabulation lists the soil types in decreasing order of mean CI for all sites under wet-season condition.

USCS Type	Mean Cone Index	USDA Type	Mean Cone Index
SP-SM	194	LS	188
SC	178	S	184
SM-SC	175	SCL	180
SM	172	SL	159
ML	160	Si	158
CH	155	SiL	156
CL	150	SiCL	156
MH	143	CL	151
CL-ML	139	SC	148
OL	115	C	146
OH	114	SiC	142
Pt	83	L	140
		Pt	83

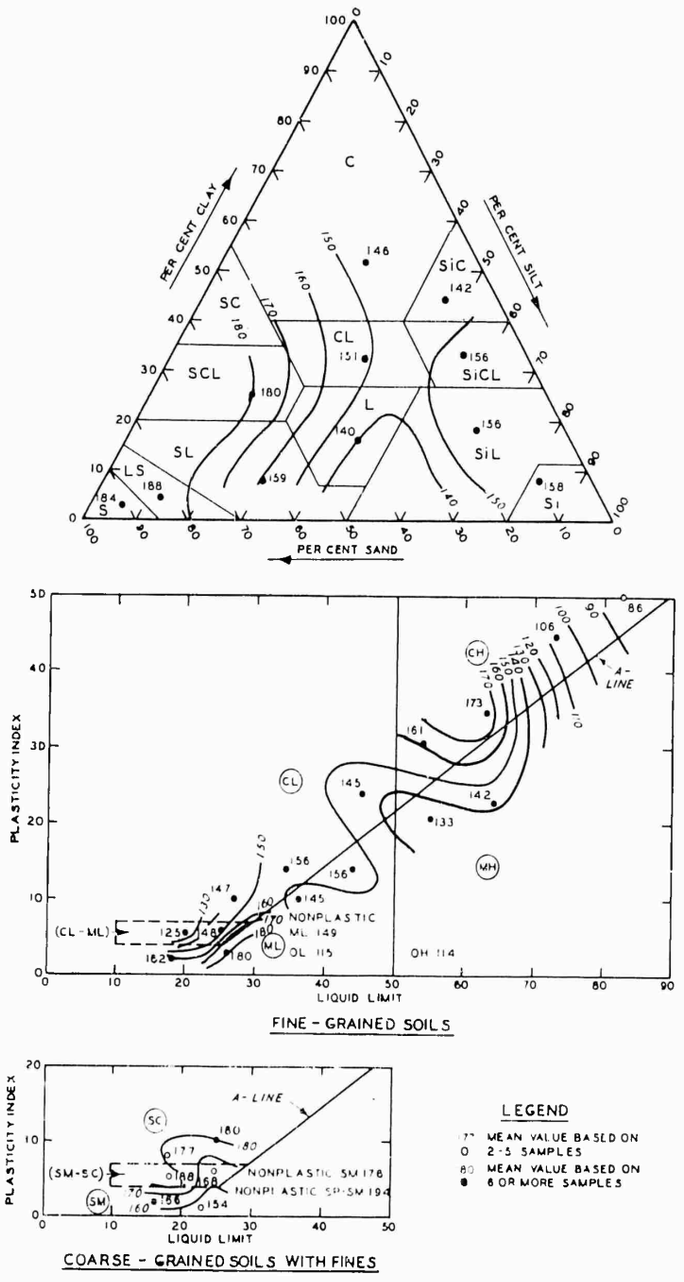

Fig. 4. Mean cone index for all sites under wet-season condition

53. On the textural triangle in fig. 4, the mean CI for a USDA soil type for all sites under wet-season condition has been plotted at the coordinate of the average sand, silt, and clay percentage derived from the data for the soil type, and lines of equal CI have been sketched. The isograms show low CI's at 40 to 50% silt with minimum values of less than 145 for soils that are predominantly mixtures of sand and silt or silt and clay. From these low values the CI increases slightly with an increase in silt content, and increases rapidly with an increase in the sand content to maximum values greater than 180. On the plasticity charts for fine-grained soils and coarse-grained soils with fines in fig. 4, the mean CI within an increment of 10 liquid limit values (10-19, 20-29, 30-39, etc.) for a USCS soil type has been plotted at the coordinate of the average liquid limit and plasticity index for the data, and lines of equal CI have been drawn. The coarse-grained soils with fines show relatively high CI's that increase with an increase in the plasticity

index of the fine-grained portion. The isograms for the fine-grained soils show: a decreasing CI with an increase in the plasticity index for soils with liquid limits less than 30; a general increase in CI with an increasing plasticity index for soils with liquid limits between 30 and 65; and a decrease in CI with an increasing liquid limit for soils with liquid limits greater than 65. The organic soils (OL, OH, Pt) have the lowest CI values (see tabulation in paragraph 52).

54. The CI of a soil at low topography is generally lower than that of the same soil at high topography (shown in table 2 and plate 2) because of higher moisture contents. An apparent reversal of this condition for USCS soil type SM-SC and USDA soil types S and CL (plate 2) can probably be attributed to a large variance of the low- or high-topography mean from the true mean due to an insufficient number of samples.

55. Remolding index. The results of the analysis of RI are given in table 3, and the summary of data is shown graphically in plate 3. The following tabulation lists the soil types in decreasing order of mean RI for all sites under wet-season condition.

USCS Type	Mean Remolding Index	USDA Type	Mean Remolding Index
SP-SM	1.61	S	1.61
SM	1.09	LS	1.24
CH	0.95	SC	1.07
SC	0.86	C	0.96
SM-SC	0.84	SiC	0.85
MH	0.73	SL	0.84
CL	0.71	SCL	0.83
ML	0.63	CL	0.81
OL	0.56	SiCL	0.79
Pt	0.56	L	0.66
OH	0.55	SiL	0.63
CL-ML	0.54	Pt	0.56
		Si	0.47

56. On the textural triangle in fig. 5 the mean RI for a USDA soil type for all sites under wet-season condition has been plotted at the coordinate of the average grain-size percentages for the soils of that type (same as in plots of cone index in fig. 4), and lines of equal RI have been sketched. RI is at a minimum when per cent silt is at a maximum and increases as per cent silt decreases, reaching values of nearly 1.00 in soils

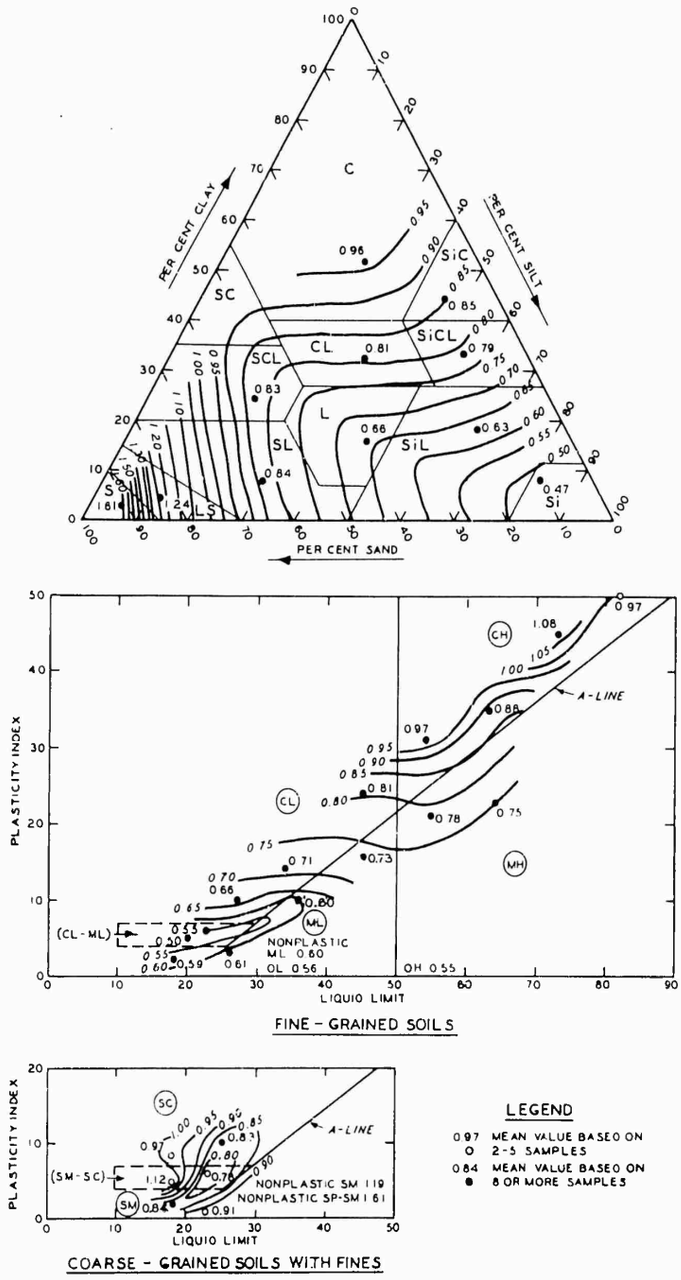

Fig. 5. Mean remolding index for all sites under wet-season condition

that are predominantly clay and well over 1.00 in soils that are predominantly sand. On the plasticity charts the mean RI for an increment of 10 liquid limit values of a soil type has been plotted at the same coordinate as for CI, and lines of equal RI have been sketched. The coarse-grained soils with fines show relatively high RI's with values of about 0.80 to 1.00 for the slightly plastic sands and appreciably over 1.00 for the nonplastic SP-SM and SM sands. The isograms for the fine-grained soils show a definite increase in RI with an increase in plasticity index above 5. Accordingly, highest RI's (close to 1.00) are indicated for the CH soils and lowest (0.50 to 0.55) for the CL-ML soils. The mean RI values for the organic soil types are similar to that for CL-ML.

57. The soil type data in table 3 and plate 3 generally show higher RI's for soils at high topography than for those at low topography. This may be attributed to lower moisture contents for soils at high topography.

58. Rating cone index. The results of the analysis of RCI are given

in table 4; the summary data are shown graphically in plate 4.

59. On the textural triangle in fig. 6 the mean RCI for a USDA soil type for all sites under wet-season condition has been plotted at the same coordinate as for CI and RI, and lines of equal RCI have been sketched. The pattern of the isograms is similar to that for RI. Minimum RCI's occur in silty soils. RCI increases with a decrease in silt content to relatively high values (greater than 120) in clayey soils and to maximum values of over 150 in sandy soils. On the plasticity charts for fine-grained soils and coarse-grained soils with fines, the mean RCI value for an increment of 10 liquid limit values of a soil type was plotted at the average liquid limit and plasticity index for the data (same coordinates as for CI and RI), and lines of equal RCI were drawn in. The pattern of the isograms, like that for RI, is of increasing strength with increasing plasticity index. Maximum RCI values for the fine-grained soils occur in the CH soils with liquid limits less than about 65, and

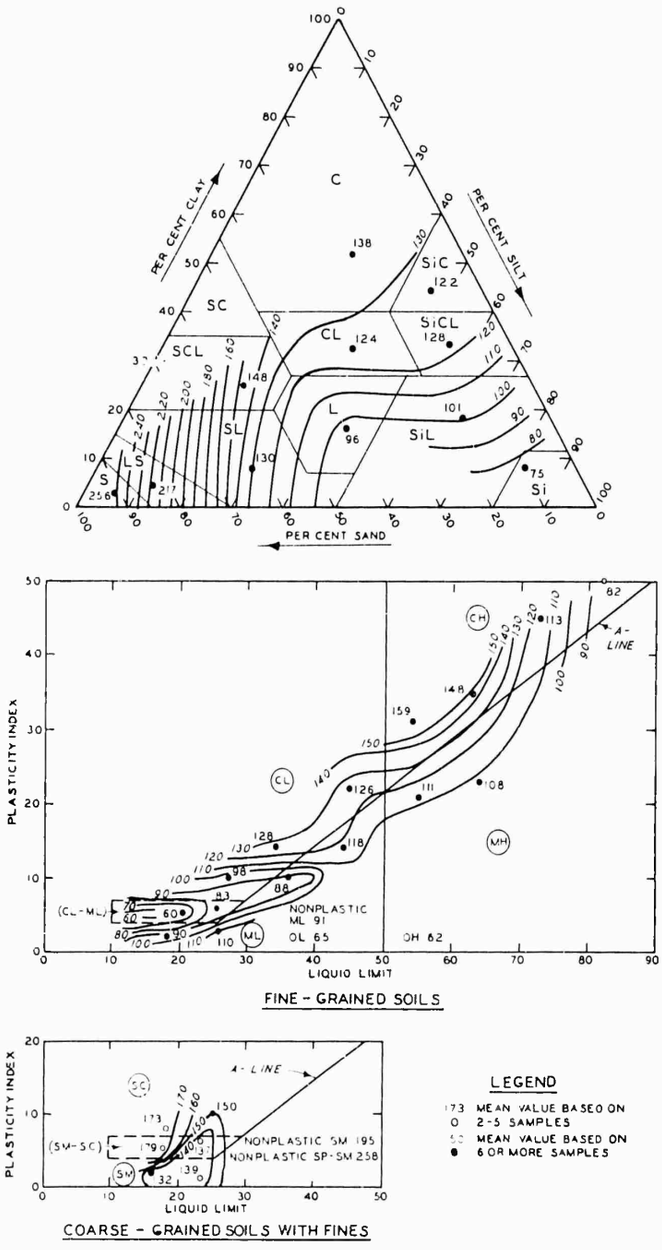

Fig. 6. Mean rating cone index for all sites under wet-season condition

minimum values in the organic soils and the CL-ML soils with liquid limits below 20. The plastic coarse-grained soils with fines (SM, SM-SC, SC) have relatively high strengths; the nonplastic SP-SM and SM soils have the highest RCI values.

60. The soil types of sites at low topography should and usually do have lower mean RCI's than sites at high topography (see table 4 or plate 4) because of normally higher moisture contents. Data that show the reverse of this condition are based on too few samples to be reliable and should be viewed with skepticism.

Analysis of moisture content

61. Results of the analysis of moisture content are given in table 5, and summary data are shown graphically in plate 5. The following tabulation lists the soil types in increasing order of mean moisture content for all sites under wet-season condition.

USCS Type	Mean Moisture Content in per cent Dry Wt	USDA Type	Mean Moisture Content in per cent Dry Wt
SP-SM	8.1	S	10.8
SM	17.0	LS	15.1
SM-SC	17.3	SCL	19.9
SC	17.5	SL	21.3
CL-ML	23.4	L	25.8
CL	25.9	CL	27.9
ML	29.0	SiL	28.7
OL	31.7	SiCL	28.8
CH	34.3	SiC	31.9
Pt	42.7	Si	32.0
MH	45.9	C	36.6
OH	65.7	SC	39.5
		Pt	42.7

62. On the textural triangle in fig. 7 the mean moisture content (to the closest unit) for a USDA soil type for all sites under wet-season condition has been plotted at the same coordinate as previously, and lines of equal moisture content have been sketched. A minimum moisture content occurs in sand. The moisture content increases at a moderate rate with an increase in silt content and at a faster rate with an increase in clay content. The nonsandy, predominantly clayey soils have the highest moisture contents. On the plasticity charts for fine-grained soils and coarse-grained soils with fines the mean moisture content for an increment of 10

liquid limit values of a soil type was plotted at the same coordinate as previously used for the strength variables, and lines of equal moisture content were sketched. The moisture contents are lowest for the coarse-grained soils with fines, with values increasing with an increase in liquid limit. A minimum mean moisture content of 8.1% may be noted for the nonplastic SP-SM sands. The values for the fine-grained soil types on the chart increase with an increasing liquid limit and a decreasing plasticity index (for a given liquid limit) from a minimum moisture content for the ML-CL soils to a maximum for the MH soils. The highest mean moisture content (65.7%) of the USCS soil types is indicated for OH soils. However, it should be pointed out that the mean moisture content for Pt soils (42.7%) is based on only one sample, and that these soils usually exhibit very high moisture contents and probably would be the type with highest mean moisture content if sufficient samples had been available for analysis.

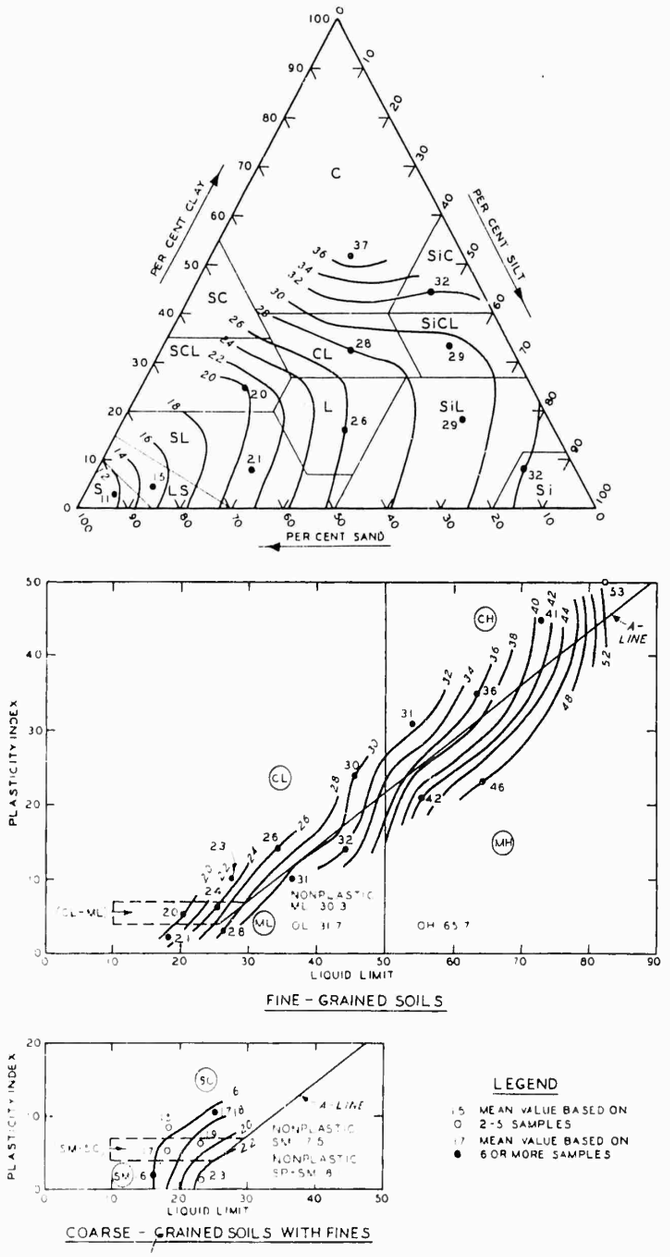

Fig. 7. Mean moisture content in per cent dry weight for all sites under wet-season condition

63. Soils of a specific type at low topography should and usually do exhibit higher moisture contents than those at high topography. Data for soils showing the reverse of this condition (table 5 and plate 5, USCS type SC and USDA sandy clay loam) were based on an insufficient number of samples, and thus may not be reliable.

Analysis of dry density

64. Density values are given in table 6 and shown graphically in plate 6. The following tabulation lists the soil types in decreasing order of mean dry density for all sites under wet-season condition.

USCS Type	Mean Dry Density in lb/cu ft	USDA Type	Mean Dry Density in lb/cu ft
SM-SC	101.1	SCL	102.2
SC	100.0	S	95.8
SP-SM	98.0	LS	93.9
SM	93.9	SL	92.9
CL-ML	93.7	CL	92.6
CL	91.3	SiCL	90.8
ML	85.7	L	90.3
CH	84.8	SiC	88.6
OL	82.3	SiL	86.9
MH	69.9	Si	85.6
OH	63.1	C	82.4
		SC	79.3

65. On the textural triangle in fig. 8 the mean dry density (to the closest unit) for a USDA soil type for all sites under wet-season condition has been plotted at the same textural coordinate as used for the strength variables, and lines of equal density have been sketched. The highest densities are indicated for the predominantly sandy soils, with maximum values of over 100 lb per cu ft shown for sands containing about 25% clay. The densities decrease moderately with an increase in silt and very rapidly with an increase in clay content above 25% to a minimum mean value of 82 lb per cu ft for the clay soil type. On the plasticity charts for fine-grained soils and coarse-grained soils with fines, the mean density value for an increment of 10 liquid limit values of a soil type was located at the same liquid limit and plasticity index coordinate as for the strength variables, and lines of equal density were sketched. The general pattern of the isograms is similar to that for moisture content, but the density

values decrease with an increasing liquid limit and a decreasing plasticity index (for a given liquid limit). Maximum densities are shown for the coarse-grained soils with fines, with peak values greater than 110 lb per cu ft indicated for SC soil types having liquid limits less than 20. Minimum mean values of less than 70 lb per cu ft occur in the MH and OH soil types. Densities of the Pt soils would undoubtedly have been the lowest, but were not measured.

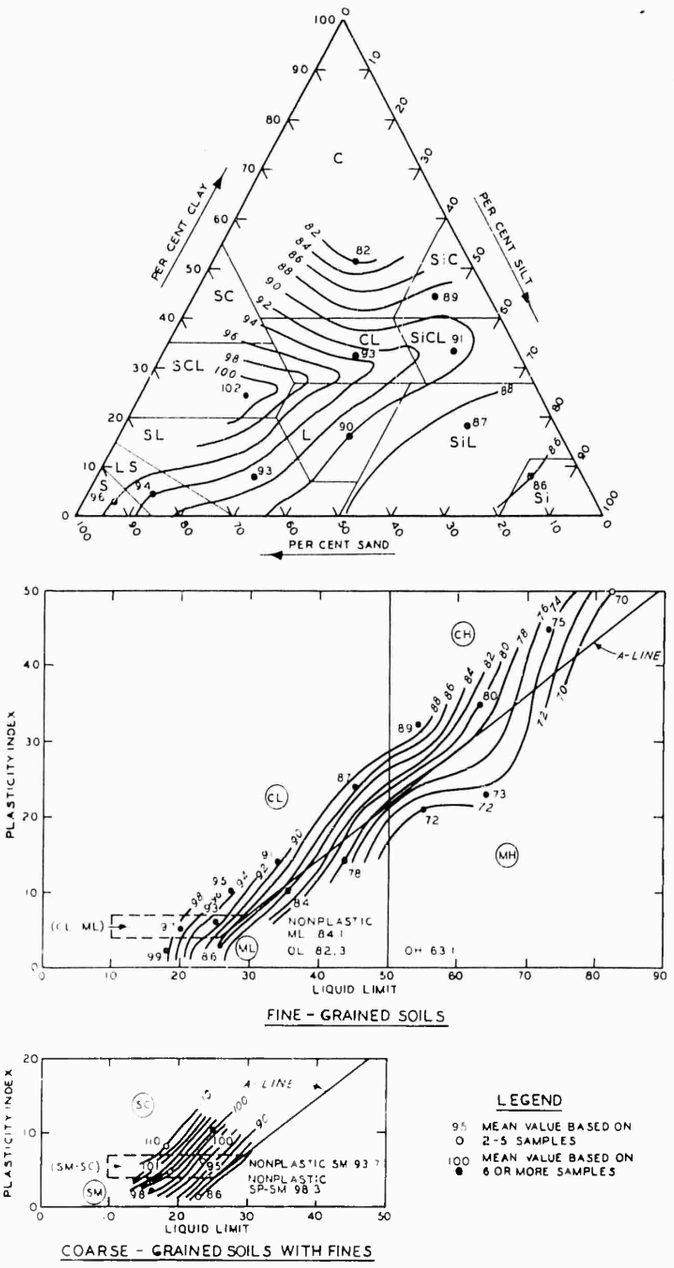

Fig. 8. Mean dry density in pounds per cubic foot for all sites under wet-season condition

66. It is interesting to note (table 6 or plate 6) that the mean density of a soil type at low topography is generally higher than that at high topography. The difference between the two values is generally greater for the nonclayey soils than for the clayey soils. The higher values may be attributed to settlement and compaction of soils due to fluctuating high water tables.

Statistical Study of Strength, Moisture Content, and Per Cent Saturation Under High-Moisture Condition

Procedures and presentation of data

67. The procedures for analysis, general source of the data (see tabulation in paragraph 46), and the statistical derivations required for this study were the same as those for the study of wet-season condition, but the data used in this analysis were measured only for low-topography sites under a condition of high moisture. As previously mentioned, high-topography sites under a condition of high moisture could not be identified from the data and therefore were not used. Mean and standard deviation values for cone index, remolding index, rating cone index, moisture content, and per cent saturation were computed for USCS and USDA soils of the 6- to 12-in. soil layer. The information is presented in table 7 in which the soils are listed in descending order of RCI as determined from the analysis. The data for CI, RI, RCI, and moisture content are also graphically shown as the fourth bar in the series of soil-type histograms in plates 2-5. The histograms permit visual comparison of the data for the various topography-moisture conditions. The data are also plotted and isograms drawn on a textural triangle and plasticity chart for CI, RI, RCI, moisture content, and per cent saturation in figs. 9-13, respectively. In these figures the mean value for the USDA soil type is plotted on the triangle at the coordinate of the average sand, silt, and clay percentage; the mean value for USCS fine-grained soils falling within an increment of 10 liquid limit values of a soil type is plotted on the plasticity chart at the coordinate of the average liquid limit and plasticity index for the data (the same procedure as followed in the wet-season condition study). There were appreciably less data to work with in this study than in the wet-season condition study. The number of samples (sites) for each USCS-USDA soil-type combination was generally less than 15 and in many cases less than five. Because values derived from a study based on such small numbers of samples are questionable, a statistical analysis of the various USCS-USDA soil-type combinations was not made.

Analysis of strength

68. Cone index. Soil strength data from 319 and 285 sites were used

in the analysis of the USCS and USDA soils, respectively. The following tabulation lists the soils in decreasing order of mean CI.

USCS Type	Mean CI	USDA Type	Mean CI
SM-SC	166	CL	140
SM	132	SCL	135
ML	126	LS	132
CH	118	SL	132
CL	118	SiL	122
MH	117	SiC	118
CL-ML	113	SiCL	117
OL	87	L	109
OH	87	C	102
Pt	83	Si	96
		Pt	83

The textural data in fig. 9 show low mean CI's for the very silty soils and very clayey (more than 50% clay) soils, and high mean CI's for the clay loam and predominantly sandy soils. The CI's on the plasticity chart generally decrease with an increasing plasticity index at a constant liquid limit. The preceding tabulation shows the organic soils to have the lowest mean CI values.

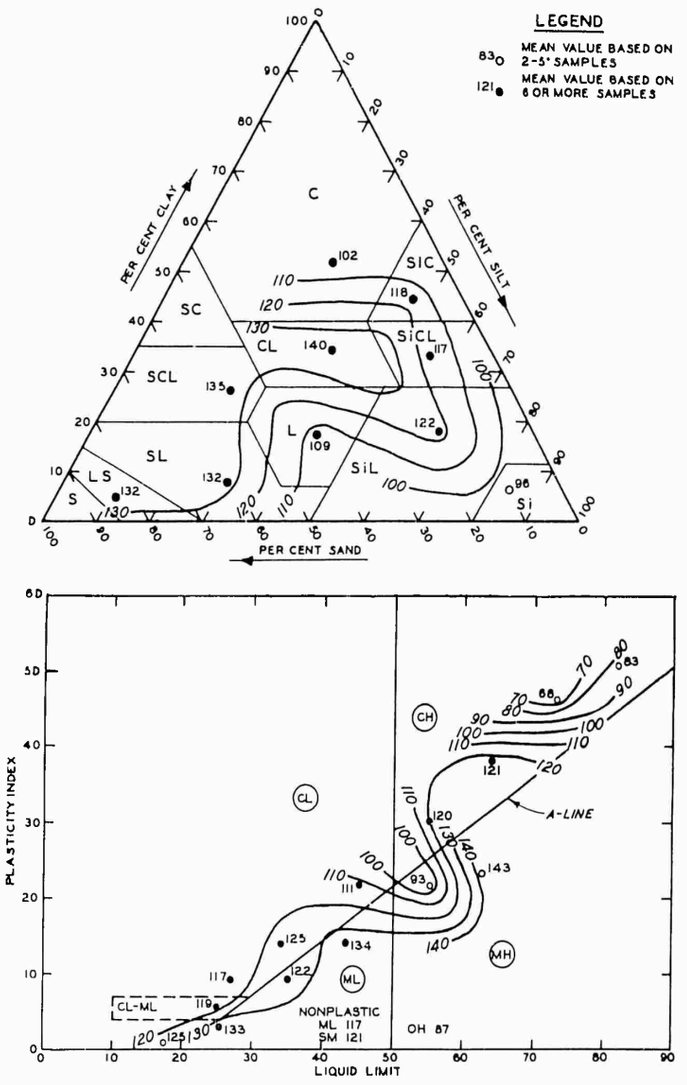

Fig. 9. Mean cone index for low topography under high-moisture condition

The data in plate 2 show that for soil types under high-moisture condition the CI decreases in approximately the same order as for soils under wet-season condition. The mean values of CI for soils at low-topography sites range from 15 to 40 points lower under high-moisture condition than under wet-season condition.

69. Remolding index. The following tabulation lists the soils in decreasing order of mean RI.

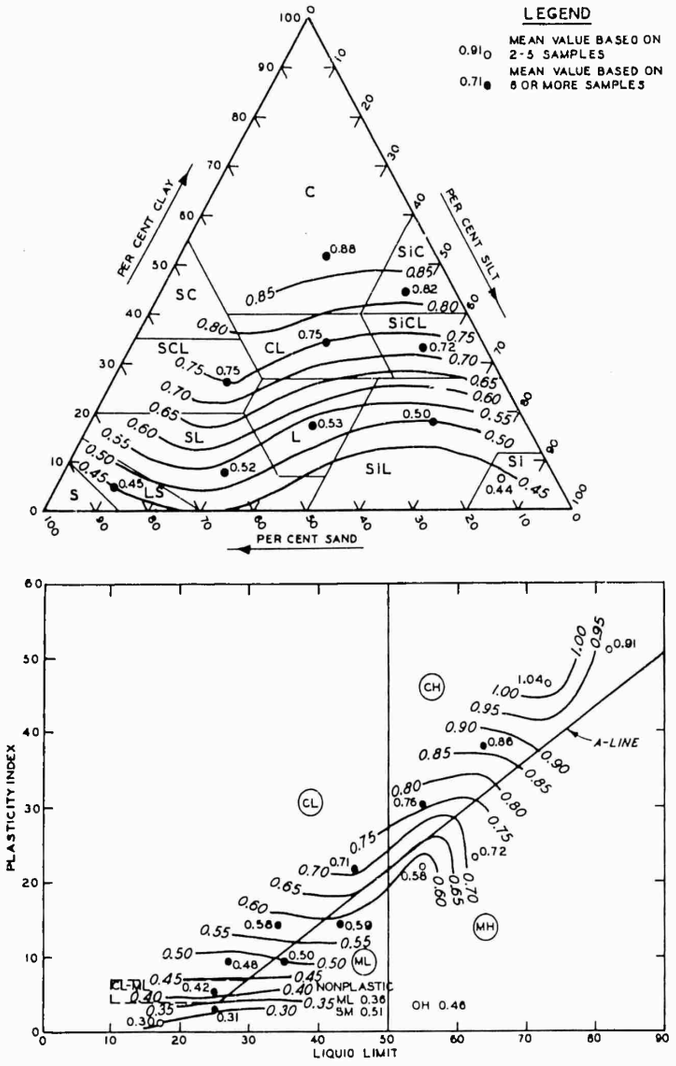

Fig. 10. Mean remolding index for low topography under high-moisture condition

USCS Type	Mean RI	USDA Type	Mean RI
CH	0.83	C	0.88
MH	0.69	SiC	0.82
CL	0.61	SCL	0.75
OL	0.56	CL	0.75
Pt	0.56	SiCL	0.72
SM-SC	0.54	Pt	0.56
SM	0.51	L	0.53
OH	0.46	SL	0.52
ML	0.43	SiL	0.50
CL-ML	0.40	LS	0.45
		Si	0.44

The isograms of mean RI in the textural triangle of fig. 10 show a constant increase in RI with an increase in percentage of clay from a minimum of 0.45 for soils with less than 10% clay to a maximum of 0.85 for soils with about 50% clay. The RI increases slightly at a given clay content with an increase in percentage of sand. The isograms on the plasticity chart show an increasing RI with an increasing plasticity index and liquid limit. At a given liquid limit the RI increases with an increase in the plasticity index. The mean RI's for the fine-grained soils of low topography under high-moisture condition, shown graphically in plate 3, range from 0.04 to 0.12 units less than those of corresponding soil and topography under wet-season condition; the means for the coarse-grained soils with fines, or sandy nonclayey soils, generally are more than 0.12 units below their wet-season means. The appreciable differences in the RI's of the coarser materials as compared to the smaller differences for the fine-grained soils can be attributed to a

larger difference in the moisture content of the coarser materials as compared to the finer materials for wet-season and high-moisture conditions, respectively.

70. Rating cone index. As mentioned previously, table 7 lists the soils in decreasing order of mean RCI. The peat and muck soil type (Pt) is listed at the bottom of the group because it probably would have had the lowest mean RCI if more samples had been available for analysis. The isograms on the textural triangle in fig. 11 show an increase in RCI with an increase in the percentage of clay from a minimum of less than 50 for silty soils with less than 10% clay to a maximum of over 100 for soils with about 40% clay. An increase in the percentage of clay above 40 results in a decrease in the RCI. The data also show a general increase in RCI at a constant clay content with an increase in the percentage of sand. The isograms on the plasticity chart show a general increase in the RCI with an increase in the plasticity index and liquid limit of the soil type. At a given liquid limit the RCI increases with an increase in plasticity index. A comparison of the mean RCI's under low topography, high-moisture condition with the means for the respective soil types under low topography,

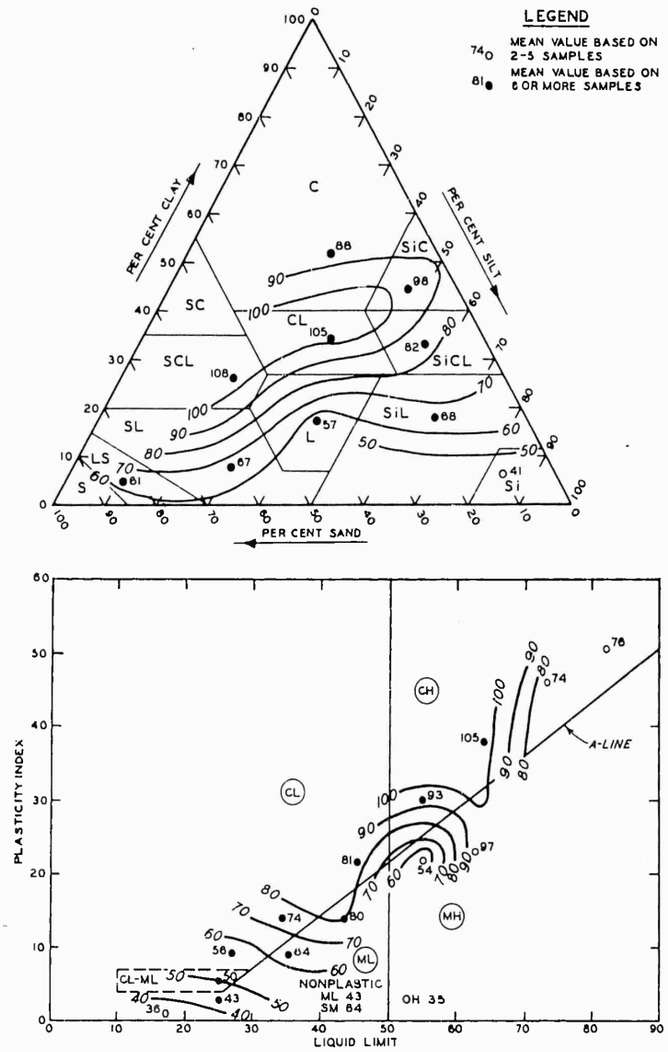

Fig. 11. Mean rating cone index for low topography under high-moisture condition

wet-season condition (plate 4) shows strengths that are between 15 and 58 RCI units lower under high-moisture condition. The differences in strength are between 15 and 40 for the fine-grained materials and between 40 and 58 for the USCS coarse-grained soils with fines and the USDA sandy nonclayey soils. The greater differences for the coarser materials agree with a similar set of strength differences for RI which, as explained in the preceding paragraph, is due to greater differences in moisture contents for the coarser materials than for the finer materials.

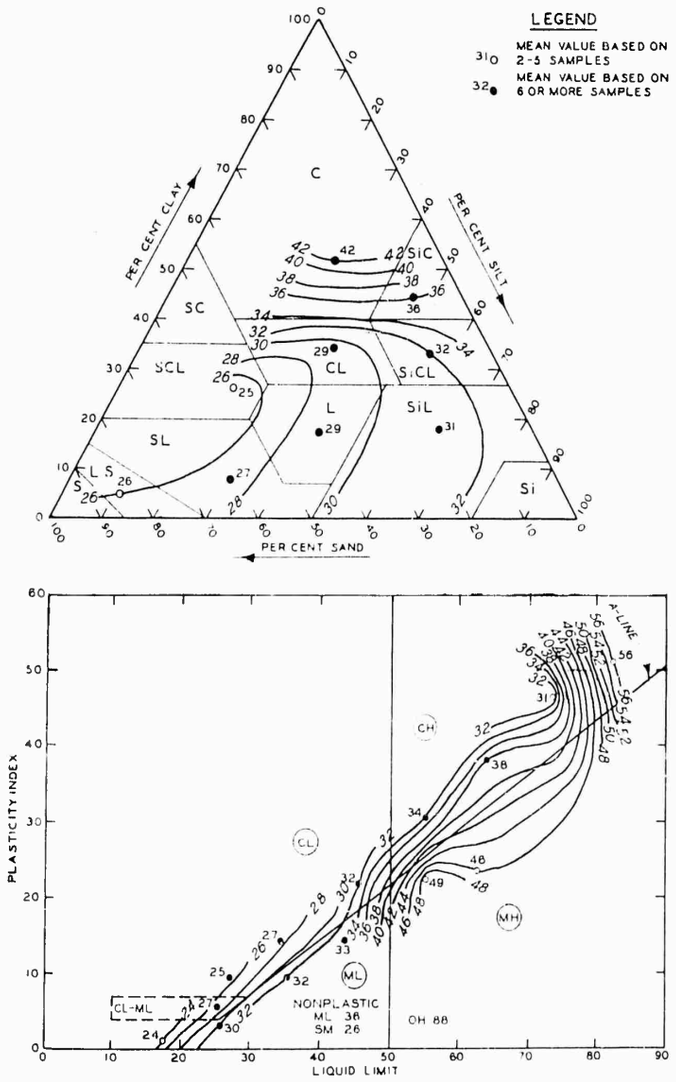

Fig. 12. Mean moisture content in per cent dry weight for low topography under high-moisture condition

Analysis of moisture content

71. The moisture-content data used in the analysis of the USCS and USDA soil types were derived from 297 and 263 sites, respectively. The soils are listed below in increasing order of mean moisture content.

USCS Type	Mean Mois Content in % Dry Wt	USDA Type	Mean Mois Content in % Dry Wt
SM-SC	23.0	SCL	24.7
CL-ML	25.7	LS	26.3
SM	26.5	SL	27.0
CL	28.5	L	28.6
ML	32.5	CL	29.2
CH	36.3	SiL	30.7
Pt	42.7	SiCL	31.6
OL	46.0	Si	34.8
MH	47.4	SiC	35.9
OH	94.5	C	42.0
		Pt	42.7

The isograms on the textural triangle in fig. 12 show lowest mean moisture contents of less than 28%

for the predominantly sandy soils. The moisture content increases slowly with a decrease in percentage of sand and rapidly with an increase in clay content above 35%. The isograms on the plasticity chart show an increase in moisture content with an increase in the liquid limit and a decrease in the plasticity index (for a given liquid limit). Lowest values are indicated for the coarse-grained soils and low-plasticity ML and CL-ML soils, and highest values are indicated for the MH and OH soils. A comparison of mean values for the soil types, plate 5, shows the moisture contents increasing in approximately the same order as for wet-season condition. The mean moisture contents of both USCS and USDA soil types under low topography, high-moisture condition range from about 4 to 6% for the coarser materials, and from about 1 to 3% for the finer materials, higher than the means for the respective soil types under low topography, wet-season condition. The greater differences for the coarser materials may be attributed to better drainage characteristics and faster rates of depletion for these soils as compared to the fine materials. It is interesting to note that even at high-moisture condition most of the MH soils and practically all of the CH soils, in situ, do not attain moisture contents greater than their liquid limit (greater than 50%); the OH soils generally have moisture contents much greater than their liquid limit.

Analysis of per cent saturation

72. The per cent saturation data used in the mean and standard deviation statistical analysis of the USCS types were obtained from 229 sites; the data from 198 of these sites were used in the analysis of the USDA soil types. Per cent saturation was not computed for the organic soils (OL, OH, and Pt) because an average specific gravity could not be assigned to these soils with any degree of confidence. Per cent saturations appreciably greater than 100%, or otherwise questionable, are indicated by an asterisk in the data tables in Appendix B and were not used in the analysis. Values of saturation slightly greater than 100% (generally between 100 and 110%) were included in the analysis even though such values are theoretically impossible. The slight excess over 100% is considered inconsequential for analysis purposes. Elimination of these data would have biased the mean values toward the low side. The tabulation on the following page lists the soils in decreasing order of mean per cent saturation.

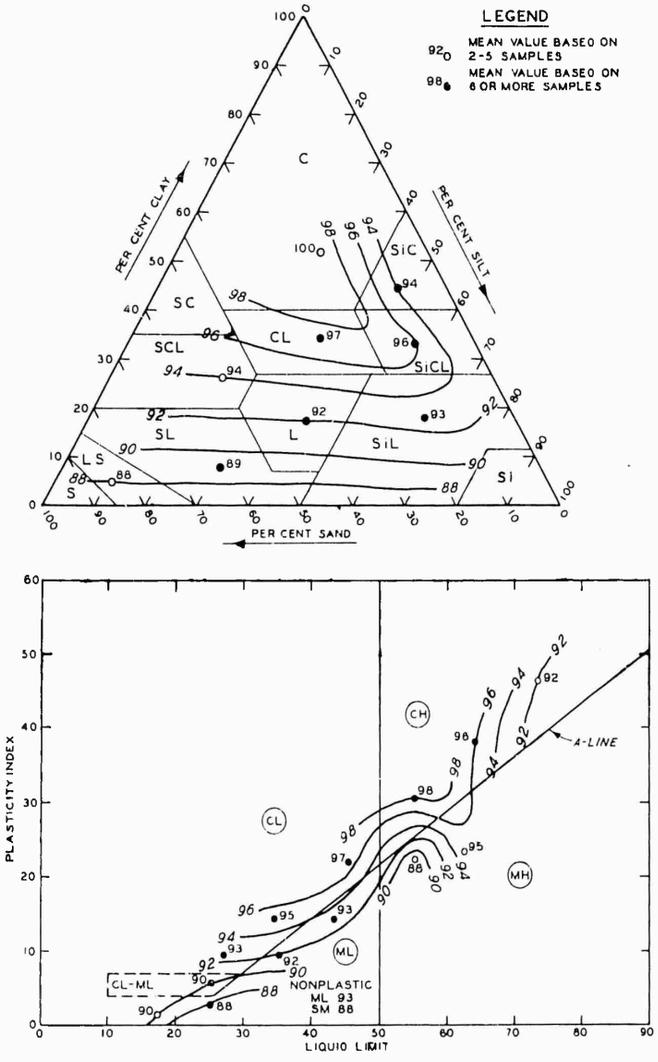

Fig. 13. Mean per cent saturation for low topography under high-moisture condition

USCS Type	Mean % Saturation	USDA Type	Mean % Saturation
CH	96.1	C	100.0
CL	93.4	CL	96.7
MH	92.0	SiCL	96.4
ML	91.6	Si	94.0
CL-ML	89.4	SCL	93.6
SM	87.1	SiC	93.5
SM-SC	77.0	SiL	92.8
		L	91.6
		SL	89.4
		LS	87.6

The isograms on the textural triangle in fig. 13 show a constant increase in per cent saturation with an increase in clay content from a minimum of 88% saturation at 5% clay to a maximum of 100% saturation at about 50% clay. The isograms on the plasticity chart show an increase in per cent saturation with an increase in plasticity index.

Cumulative Frequency Analysis of Rating Cone Index Under Wet-Season and High-Moisture Conditions

Procedures and presentation of data

73. The data used in this analysis are the same that were used in the mean and standard deviation analyses of RCI under wet-season and high-moisture conditions, respectively. The only difference between this and the previous analysis is in the statistical treatment of the data.

74. RCI's for each soil type-moisture condition were grouped into

increments of 10 RCI's from 1 to 300, i.e. 1 to 10, 11 to 20, 21 to 30, etc. The number of measurements for each increment was tallied and its per cent of the total number was computed. The percentages were added cumulatively starting with the one corresponding to the 291-to-300 increment and progressing in order of decreasing RCI. Thus the larger value of the highest RCI increment for which data were available always was 0% frequency, and the smaller value for the lowest RCI increment for which data were available was 100% frequency. The RCI at 50% frequency is the median value. This value, incidentally, generally was smaller than the mean RCI previously established for a soil type.

75. The data are plotted in cumulative frequency graphs in plates 7-10 for the USCS soil types and in plates 11-14 for the USDA soil types. Graphs for three moisture conditions are generally shown for each soil type: low topography, high-moisture condition, indicated by a solid line; and wet-season condition of low and high topography indicated by a dotted line, and a dashed line, respectively. Data were not available for sandy clay nor were data available for analysis of one or more of the wetness conditions in some of the other soil types. The number of samples (sites) used in each analysis is indicated on its graph.

76. It is noted that where an appreciable number of samples were available for analysis the three graphs drawn for each soil type seldom cross each other, and further that the general range of RCI increases from the high-moisture graph through that for low-topography wet-season to the high-topography wet-season graph. This is taken to be evidence of proper categorization of the basic field data into the three general moisture conditions.

Explanation of graphs

77. Each graph shows the manner in which RCI varied. For example, refer to the solid-line graph for CH soils in plate 7, and it can be seen that 10% of the CH soils under low topography, high-moisture condition had RCI's greater than 170, 20% had values greater than 125, and 30% had values greater than 110, etc.

Estimating probability of vehicle "go"

78. The graphs can be used for estimating the probability of "go"

for military vehicles. Soils with RCI greater than the VCI will permit 50 vehicles to pass in straight-line echelon or one vehicle to execute severe maneuvers. Thus, the cumulative frequency corresponding to the VCI indicates the probability of a vehicle's success in a given soil type under a given general moisture condition. For example, refer to the solid-line graph for ML soils in plate 9. If it is known that the soil type is ML and that the water-table conditions are such that the soil is under low topography, high-moisture condition (but specific data on strength cannot be obtained), it can be hypothesized that the M48 tank (VCI = 49) would have a 52% probability of "go."

Study of USDA Soil Types Classified in Terms of USCS Soil Types

79. This study was performed on soils of the 6- to 12-in. layer to determine the frequency of each USDA soil type occurring as a USCS soil type, and the predominant USCS soil type from the position of the soil on the USDA textural triangle (fig. 14). The information derived from the study may be used to estimate the most likely USCS soil type if the USDA type or the general textural composition of the soil is known.

Source and reliability of data

80. The soil-type information used in the analysis was based on data obtained from 1176 sites located in 44 states. The USCS type was identified from Atterberg limits and mechanical analysis (generally sieve analysis) data. The USDA type generally was identified from textural information derived from a hydrometer analysis. Grain-size distributions determined by the hydrometer method do not always yield exactly the same results as would have been obtained by the rather time-consuming pipette method, which is the official USDA method for determining soil textures. Some textural designations therefore probably are not the same as would have been obtained by the pipette method. The two methods frequently give differences in the order of 2 or 3% clay, which are enough to cause some soils to be classed as loams, for example, by one method and silt loams by another. The 0.005-mm grain size usually was the smallest measured in the hydrometer analysis. The distinction between silt and clay sizes is at 0.002 mm. The USDA class for most sites, therefore, was based on values of

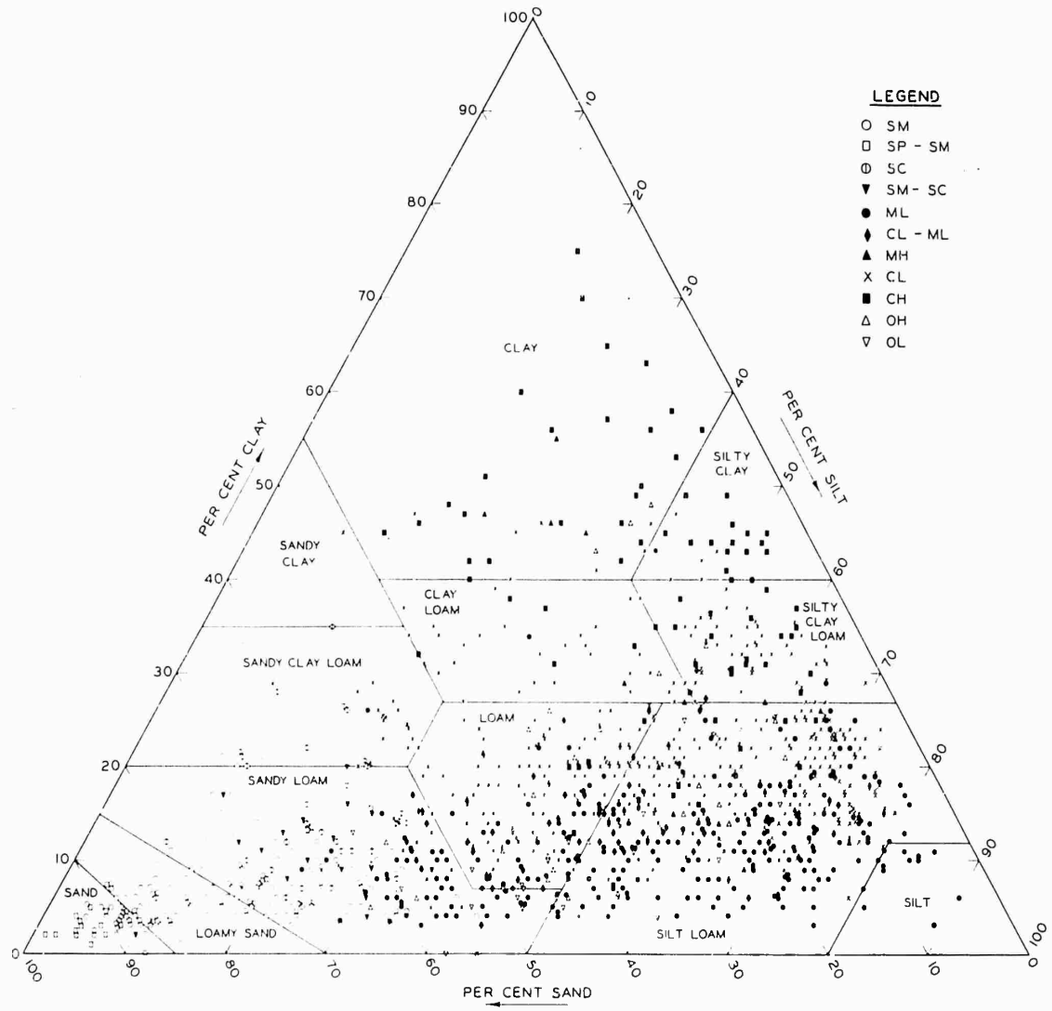

Fig. 14. Distribution of USCS soils on USDA textural triangle

per cent silt and clay extrapolated from an extension of the mechanical analysis curve to 0.002 mm. The USDA types at many of the 1951 field-trip sites, where hydrometer analyses were not run, were estimated with, it is believed, a fair degree of reliability from textural information of the profile contained in the soil series descriptions.

Results of the study

81. The results of the study are presented in table 8 and as points identified in USCS terms plotted on a USDA textural triangle, fig. 14. Fig. 15 shows USDA soil types in the textural triangle classified as predominant USCS soil types based on data shown in fig. 14.

82. Table 8. In table 8 the USCS soils are arranged from left to

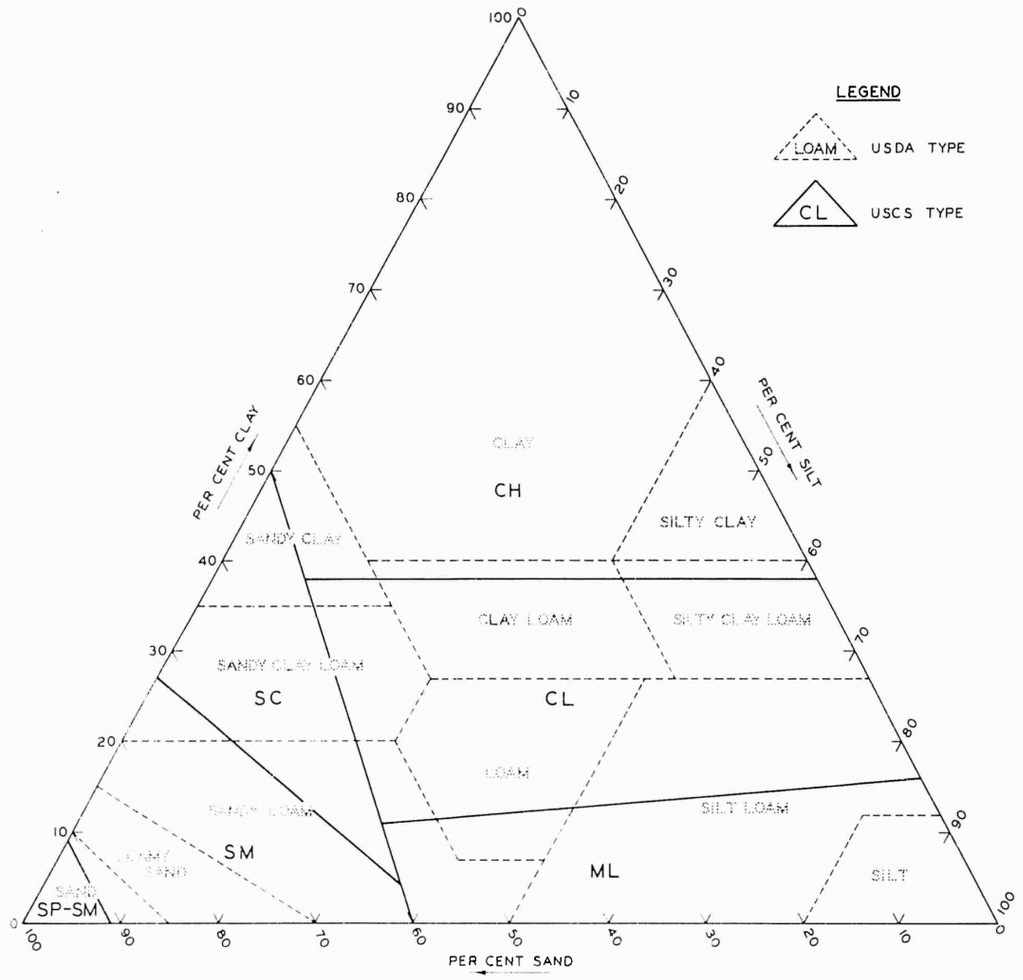

Fig. 15. Predominant USCS soil types in USDA textural triangle

right and the USDA soils from top to bottom in approximate order of decreasing grain size. The organic soils are grouped at the right and bottom positions of their respective soil classification systems. The sequence of numbers in the upper left corner of each box reads from left to right for a particular USDA soil type and represents the respective percentages of all samples of that type that classified as specific USCS soil types; e.g. of all USDA S (sand) soil samples 47% classified as SP-SM, 50% as SM, and 3% as SM-SC. The figure in the lower right corner of the box represents the number of samples of the particular USCS-USDA soil used in the analysis. The circled number represents the largest percentage of samples, and thus the predominant USCS type occurring for a given USDA type. A sample interpretation of the figures in the SiL-CL box is presented in the table.

83. Since the USCS and the USDA soil classification system both employ texture, a rough correlation between the two identifications of the same soils is to be expected. If the USDA system considered plasticity as well, the correlation might have been better than it was. In general terms, the USDA sandy soils classified as USCS coarse-grained soils with fines; and the USDA silty, clayey, and loamy soils classified as USCS fine-grained soils. More specifically, the sandy nonclayey USDA soils (S, LS, SL) usually classified as USCS coarse-grained soils with fines and were predominantly SM soils; the sandy and clayey USDA soils (SCL and SC) classified as either a coarse-grained soil with fines or fine-grained USCS soil and the USDA SCL soil was predominantly a USCS CL soil. The number of soils classified as sandy clay (two) was not sufficient to provide a reliable basis for estimating the probability of its occurrence as USCS soil types. The fine-textured, nongravelly USDA soils all classified as fine-grained USCS soils. The L (loam), SiL (silt loam), CL (clay loam), and SiCL (silty clay loam) soils were predominantly CL; the Si (silt) soils were predominantly ML; the SiC (silty clay) and C (clay) soils were predominantly CH; and Pt (peat and muck) soils classified as Pt in the USCS.

84. Textural triangle. Each point on the USDA textural triangle (fig. 14) is plotted according to the respective percentages of sand, silt, and clay in the soil sample, and the point is identified by its USCS name.

85. From an analysis of the distribution of USCS soil-type data on the textural triangle it was possible to subdivide the USDA soil types into component parts of predominant USCS types. Fig. 15 shows the distribution of predominant USCS types superimposed on the USDA textural divisions, based on the soil data in fig. 14. If the relative amount of clay or sand is known for a particular USDA soil type, the most likely USCS type can be estimated with a greater degree of confidence than if the texture is not known and the type is based upon estimates from table 8. For example, the table shows USDA silt loam soils (SiL) to be predominantly CL although only 45% of the SiL soils are so classified. The table also shows that SiL soils occur as ML 36% of the time. In the textural triangle in fig. 15 the silt loam configuration is subdivided by a line projected from 13% clay (at 50% silt) to 16% clay (at 0% sand) into sections of high-clay silt loam and low-clay silt loam. The high-clay portion has a predominance of over

50% CL soils whereas the low-clay portion has a predominance of over 50% ML soils. Further analysis of the triangle indicates the following. Loams with clay contents greater than 11 to 13% were predominantly CL soils and those with less than that percentage were primarily ML soils. Clay loams and silty clay loams were predominantly CL soils but usually were CH soils when the clay contents were greater than 38%. Depending upon the textural locations on the triangle, sandy loams were predominantly SM, SC, CL, or ML soils; sandy clay loams were predominantly SM, SC, or CL soils; and sandy clays were predominantly SC, CL, or CH soils. Silts were usually ML soils and loamy sands were almost always SM soils. Sands with less than 91% sand sizes classified as SM soils and sands with more than 91% sand sizes as SP-SM soils. Sands with more than 95% sand sizes probably would classify as SP or SW soils if data for these clean sands had been used in this study.

Study of USCS Soil Types Classified in Terms of USDA Soil Types

86. This study was performed to determine the frequency of each USCS soil type occurring as a USDA type.

Source and reliability of data

87. The soil data used in this analysis were the same as those employed in the study of USDA soil types classified in terms of USCS soil types; therefore, the source and reliability of data are the same (see paragraph 80).

Results of the study

88. The results of the study are presented in table 9. The mechanics of analysis, and the symbols and arrangement of soil types in the table are the same as those employed in the USDA-USCS comparison study.

89. The study indicated the following. All of the USCS coarse-grained soils with fines (GM, GC, SP-SM, SM, SM-SC, and SC), with the exception of GM and GC, classified as sandy USDA soils. The GM and GC soils classified as either a sandy or a fine-textured USDA soil when the USDA type was prefixed with the term gravelly, cobbly, or stony. The names of all USDA soil types classified as a GM or GC soil are not known and the per cent frequency values, noted in the table, are unreliable as

probabilities of occurrence due to the insufficient number of samples (two for GM and one for GC) used in the analysis. The SP-SM soils all classified as S (sand), the SM and SM-SC soils were predominantly SL (sandy loam), and the SC soils were predominantly LS (loamy sand). The fine-grained and organic USCS soils usually classified as fine-textured and occasionally as sandy-textured USDA soils. The ML, CL-ML, MH, CL, and OL soils were predominantly SiL (silt loam); the CH soils were predominantly C (clay); the OH soils were predominantly SiL (silt loam) or L (loam); and the Pt soils all classified as Pt (peat or muck) in the USDA system.

Study Comparing USDA Soil Types of the 0- to 6-in. and 6- to 12-in. Layers

90. The frequency of occurrence of USDA soil types in the 6- to 12-in. layer for given USDA soil types in the 0- to 6-in. layer of the soil profile was studied. The relations developed should be useful in estimating the type of soil in the 6- to 12-in. layer when USDA data for the surface soil only are available. It should be noted that the 0- to 6-in. and the 6- to 12-in. layers are depths relevant to trafficability and are not necessarily naturally occurring soil layers.

Source and reliability of data

91. The 0- to 6-in. and 6- to 12-in. USDA soil-type data used in this study were derived from 1140 sites located in approximately 44 states. The 6- to 12-in. layer data for these sites were employed in the USCS-USDA soil-type comparison studies discussed earlier; consequently, the procedures used in identifying the soil types for the 6- to 12-in. layer are the same as those discussed in paragraph 80. The textural types for about 80% of the 0- to 6-in. soil layer data were identified from values derived by means of a mechanical hydrometer analysis of the soil; the remaining 20% of the data were derived from textural-type names included in the soil series descriptions. The hydrometer analysis method of identification is, of course, the more valid method since it is based on measured values. The type name based on this textural data was used, therefore, where the soil type as identified by both methods differed.

Results of the study

92. Results of the study are shown in table 10. The soil types of the 6- to 12-in. and the 0- to 6-in. layers are arranged from left to right and from top to bottom, respectively, in order of decreasing strength as determined from the study of rating cone index values under low topography, high-moisture condition (discussed in paragraph 70). The numbers in the upper left corner of the boxes are percentages and read from left to right. Each value represents the percentage of all sites of a particular 0- to 6-in. soil type that is characterized by a specific soil in the 6- to 12-in. layer of the profile. The circled value for each 0- to 6-in. soil type designates the predominant soil of the 6- to 12-in. layer underlying the surface soil in the profile. The number in the lower right corner of the box represents the number of sites of a particular 0- to 6-in. and 6- to 12-in. soil-type combination used in the percentage analysis. The heavy-outlined boxes progressing from the upper left to the lower right in the table indicate that the soil of the 0- to 6-in. layer is the same as that of the 6- to 12-in. layer. For example, the 0- to 6-in. soil of six sites has been classified as SCL (sandy clay loam). At only one site (1/6 or 17% of all the sites) was the soil type in the 6- to 12-in. layer the same as that in the 0- to 6-in. layer, i.e. SCL throughout the profile. However, at three sites (3/6 or 50% of the SCL sites), the predominant number, the 6- to 12-in. soil layer was classified as C (clay). Thus, by reason of this analysis, if the surface soil is sandy clay loam the most likely underlying soil (with a probability of 50%) will be clay.

93. The analysis showed the soil types of the 6- to 12-in. layer to be the same as those of the 0- to 6-in. layer 71% of the time. In general, soils of the 6- to 12-in. layer are predominantly the same type as those of the 0- to 6-in. layer with the following exceptions. Clays are usually found below sandy clay loams and silty clays, and silt loams are more commonly found below silt. No data were available for the analysis of sandy clay.

PART V: SOIL TRAFFICABILITY CLASSIFICATION SCHEME AND RELATED STUDIES

94. The soil trafficability classification scheme presented in this part is essentially a listing of soil types in descending order of their median rating cone indexes under three of four general conditions of moisture: high and low topography under wet-season condition, and low topography under high-moisture condition. Information for high topography, high-moisture condition will be included in the scheme when sites under this condition are properly identified and the data from them have been analyzed. Soil types according to both the USCS and the USDA soil classification system are employed. Thus it can be considered an eightfold scheme for the classification of soils from a trafficability standpoint. The scheme considers the strength of soils in the 6- to 12-in. layer located in temperate climatic areas.

95. This part of the report summarizes the vehicle classification categories developed in an earlier study, and describes the soil trafficability classification scheme and its possible application in detail. Tables 11 and 12 supplement the classification scheme in that they provide specific data on the per cent probability of "go" for military vehicles on level and sloping terrain for each of the three general moisture conditions and the two soil classification systems.

Vehicle Categories

96. Different military vehicles require different minimum soil strengths for operation. A soil condition that is easily trafficable to one vehicle may be impassable to another. In order to make the soil trafficability classification meaningful, it was thus necessary to introduce the idea of vehicle requirements and incorporate it into a scheme for estimating the probability of vehicle "go."

97. In a previous study described in TM 3-240, 9th Supplement, Vehicle Classification, a system was developed for classifying vehicles on the basis of the minimum soil strength each required for 50

straight-line passes or one severe maneuver on level ground. This system is condensed and repeated here.

Vehicle Category	Vehicle Cone Index Range	Vehicles
1	20-29	The M29 weasel, M76 otter, and Canadian snowmobile are the only known standard vehicles in this category
2	30-49	Engineer and hi-speed tractors with comparatively wide tracks and low contact pressures
3	50-59	The tractors with average contact pressures, the tanks with comparatively low contact pressures, and some trailed vehicles with very low contact pressures
4	60-69	Most medium tanks, tractors with high contact pressures, and all-wheel-drive trucks and trailed vehicles with low contact pressures
5	70-79	Most all-wheel-drive trucks, a great number of trailed vehicles, and heavy tanks
6	80-99	A great number of all-wheel-drive and rear-wheel-drive trucks, and trailed vehicles intended primarily for highway use
7	100 or greater*	Rear-wheel-drive vehicles and others that generally are not expected to operate off roads, especially in wet soils

* Limited to maximum of 200 vehicle cone index in the trafficability classification table. Few vehicles within this category have VCI's greater than 200.

The vehicle cone indexes for individual vehicles within the categories are included in Appendix A of WES TM 3-240, 14th Supplement.

Soil Trafficability Classification Scheme, Level Terrain

98. The soil trafficability classification scheme for level terrain is presented in USCS terms in table 11 for high topography and low topography under wet-season condition and low topography under high-moisture condition. The scheme is presented in USDA terms in table 12 for the same set of moisture conditions, respectively. Information presented in the scheme for each soil type includes a general estimate of the probability of "go" on level terrain of vehicles of various categories, measurements of soil strength, and general effects of slipperiness and stickiness.

Classification of vehicle "go"

99. For the sake of simplicity of presentation the per cent probabilities of vehicle "go" have been arbitrarily classified as follows:

Excellent	greater than 90% probability of "go"
Good	76 to 90% probability of "go"
Fair	50 to 75% probability of "go"
Poor	less than 50% probability of "go"

The probability-of-"go" information is illustrated in tables 11 and 12 by a series of bar graphs, one for each soil type.

Procedure for deriving "go" information

100. The vehicle cone indexes corresponding to 50, 75, and 90% probability of "go," the limiting values of the vehicle "go" groupings, were derived from the cumulative frequency rating cone index graphs (plates 7-14). For example, from the ML soil-type graph for low topography, wet-season condition (plate 9) it can be seen that the RCI's at 50, 75, and 90% cumulative frequency are 77, 47, and 32, respectively. This means that the soil strength will be greater than 77 RCI 50 times out of 100, greater than 47 RCI 75 times out of 100, and greater than 32 RCI 90 times out of 100. This in turn indicates that vehicles with a VCI greater than 77 will have less than a 50% probability of "go" (black area of graph in table 11, classified as poor); those with a VCI ranging from 47 to 77 will have a 50 to 75% probability of "go" (diagonal-line area, classified as fair); those with a VCI ranging from 32 to 46 will have a 76 to 90% probability of "go" (stippled area, classified as good); and those with a VCI less than 32 will have greater than 90% probability of "go" (white area, classified as excellent).

Reliability of "go" information

101. The probability lines delineating the vehicle "go" groupings on the bar graphs in tables 11 and 12 are solid where the data were based on more than four samples and the information shown was considered to be reliable. The lines are broken where less than five samples were used in the analysis or the data were otherwise questionable. The positioning of these broken lines was based on an assumed rating cone index estimated from the textural, plasticity, and organic properties of the soil.

102. It should be particularly noted that the occurrence of obstacles

was not considered in the probability of "go" estimates for level or sloping terrain. Obstacle components of terrain, such as trees, hedges, boulders, and streams, that present a definite deterrent or obstruction to mobility of vehicles would certainly decrease the probability of "go."

Soil strength information

103. The range of cone index, remolding index, and rating cone index, and the mean rating cone index (discussed in Part IV) are presented again in tables 11 and 12. It may be noted that the mean RCI for a soil generally is slightly greater than its median RCI, which is the same value as the VCI at 50% probability of "go."

Soil slipperiness and stickiness information

104. The effects of slipperiness and stickiness were estimated qualitatively on the basis of experience, and noted in tables 11 and 12. Severe slipperiness will often cause the immobilization of wheeled vehicles that are not equipped with traction devices and, in combination with relatively low RCI (a few points above VCI), will often cause even chain-equipped wheeled vehicles to become immobilized. Slipperiness may adversely affect control of tracked vehicles, but will seldom be responsible for their immobilization. Soils designated as having moderate to severe stickiness will, when wet, cling to a vehicle's running gear; slight stickiness has never been found sufficiently detrimental to cause "freezing" of a vehicle's running gear and immobilization of the vehicle, except in one case where sticky soil trapped between the tracks and body of an M29C weasel caused it to become immobilized.

Probability of Vehicle "Go" on Level and Sloping Terrain

105. The per cent probabilities of vehicle "go" on level and sloping soils classified in terms of the USCS are presented in table 13 for high topography and low topography under wet-season condition, and low topography under high-moisture condition; these data on soils classified in terms of the USDA system are presented in table 14. The data for each soil type-moisture condition include the probabilities of negotiation of level terrain (0% slope) and slopes of 15, 30, and 45% by vehicles in each

of the seven vehicle categories. The probabilities were established for the median VCI within vehicle categories 1 through 6 (i.e. 25 VCI for category 1, 40 VCI for category 2, etc.) and for the minimum VCI (100) in category 7, for tracked vehicles with grousers shorter than 1-1/2 in. and wheeled vehicles, respectively. Tracked vehicles with grousers longer than 1-1/2 in. would have a slightly better probability of "go" on sloping soils than that computed for tracked vehicles with shorter grousers. For all practical purposes, however, the difference is insignificant and the probabilities of "go" listed under the "tracked" column in tables 13 and 14 may be applied to both types of tracked vehicles. The probability of "go" established for a vehicle with a median VCI of a category will closely approximate and may be used to estimate the probabilities of "go" for other vehicles within the respective category.

Procedure for deriving "go" information

106. The probability data were obtained from the cumulative frequency-rating cone index graphs presented in plates 7-14. If vehicle cone index is substituted for rating cone index and probability of "go" for cumulative frequency, an estimate of the probability of "go" on level terrain can be made for any vehicle for which a vehicle cone index has been computed (discussed in paragraph 78). In order to determine the probability of "go" for a given slope the slope index, derived from the curve of the vehicle type shown in plate 1, was added to the VCI and the probability of "go" for the soil type-moisture condition was based upon the cumulative frequency reading for this new VCI value. For example, the probabilities of "go" for tracked and wheeled vehicles of 55 VCI (median VCI of category 3), respectively, on 0, 15, 30, and 45% slopes of a silt loam soil area under low topography, high-moisture condition were derived as follows. The vehicle cone index was substituted for rating cone index in the abscissa and the probability of "go" was substituted for cumulative frequency in the ordinate of the silt loam low topography, high-moisture condition graph shown in plate 13. At 55 VCI the probability of "go," read from the graph, was 55%. This value applies to tracked and wheeled vehicles at 0% slope. The slope index at 15% slope, read from the curves of plate 1, was 7 for tracked vehicles with grousers shorter than 1-1/2 in. and 9 for

wheeled vehicles. This index was added to the VCI to provide values of 62 (55 plus 7) for the tracked vehicle and 64 (55 plus 9) for the wheeled vehicle, respectively. The probabilities of "go" for the VCI values of 62 and 64, read from the silt loam low topography, high-moisture condition graph in plate 13, were 47 and 44%, respectively. At 30% slope the slope indexes were 15 and 20, the VCI's became 70 and 75, and the resulting probabilities of "go" were 35 and 30% for the two vehicle types, respectively; at 45% slope the slope indexes were 27 and 40, the VCI's became 82 and 95, and the probabilities of "go" read from the graph were 23 and 14%, respectively. The probability of "go" can be estimated for any slope and for any vehicle for which a VCI has been computed by using data read from the proper soil type-moisture condition graph and slope index curve, and following the procedures discussed above.

Reliability of "go" information

107. The probability values for wet-season condition are undoubtedly influenced by the high-moisture low-strength bias associated with the basic data (previously discussed in paragraph 39a); thus, the actual probability of "go" would be somewhat higher than that indicated.

108. The number of samples used in the analysis of a particular soil type-moisture condition provides a rough estimate of its reliability. Those based on more than 30 samples would generally have a small plus and minus probability error, i.e. the true probability based on an infinite number of the same type of samples would not vary by more than plus or minus a small standard error of estimate. The probabilities of "go," therefore, are considered to be of good reliability. An analysis based on less than 30 samples and especially less than 15 samples, but more than 4 samples, would have a moderate standard error of estimate (estimated at $\pm$10 to $\pm$25% probability of "go"). Probabilities based on an analysis of this number of samples are considered to be of fair reliability and should be viewed with skepticism. Five was arbitrarily chosen as the minimum number of samples needed to provide a reasonably reliable probability value; probabilities of "go" were only estimated for the analyses based on fewer than 5 samples. The estimations were based on assumed strengths estimated from the textural, plasticity, and organic properties of the soil.

Application of Information for Estimating Trafficability Conditions

109. The information presented in the trafficability classification scheme and probability of "go" tables should be especially useful in military intelligence, military-operations planning, and vehicle-design work. The information may be applied in quantitative or qualitative terms to military problems or studies of a tactical or strategic nature.

110. Presumably the information will be used to estimate trafficability conditions for areas that, in most cases, will not be accessible for measurements. It may be reasoned that the information would not be needed for accessible areas because direct strength measurements with the cone penetrometer could be taken where and when desired. The information, however, could be used in these areas to facilitate a particular study, e.g. the speedy selection of one of several possible access routes; the selection of possible barrier areas (mine fields, etc., that normally would have good to excellent probabilities of "go"); or the selection of broad areas providing the best positions for offensive or defensive operations.

Use of trafficability classification scheme

111. The following paragraphs explain how the classification scheme can be used by means of examples.

112. Season, soil type, and topography. If the season, say wet season, the soil type, say CL, and the topography, say low topography, of an area are known, the data in table 11 for low topography, wet-season condition would be used. In this case, the probability of "go" on the CL soil would be less than 50% for vehicles with VCI's greater than 85, between 50 and 75% for vehicles with VCI's between 60 and 85, between 76 and 90% for vehicles with VCI's between 41 and 59, and greater than 90% for vehicles with VCI's less than 41.

113. Season, soil type, topography, and rainy weather or high-water-table condition. If in addition to the knowledge of the season, soil type, and topography it is known that the soil has been subjected to several days of rain, or a high water table is known to exist, the low topography, high-moisture condition data presented in table 11 (or table 12 for USDA soils)

would be used. The probability of vehicle "go" on CL soils under these conditions would be less than 50% for vehicles with VCI's greater than 67, between 50 and 75% for vehicles with VCI's between 43 and 67, between 76 and 90% for vehicles with VCI's between 31 and 42, and greater than 90% for vehicles with VCI's less than 31.

114. Probability of one or two straight-line passes for a vehicle. A rating cone index equal to 75% of the vehicle cone index usually will permit one or two straight-line passes of the vehicle. The probability of a successful operation may be derived from the classification scheme (tables 11 and 12) by projecting a line down from the VCI value multiplied by 0.75 and reading the probability at its intersection with the particular graph of soil type-wetness condition under consideration. For example, a vehicle with a VCI of 100 would have a recomputed index of 75 (100 × 0.75). The probability of its making one or two straight-line passes on a CL soil under low topography, wet-season condition (from table 11) would be 50 to 75% (estimated at 60%).

Use of probability of "go" tables

115. The following paragraphs explain how the probability tables (tables 13 and 14) may be used. The particular data to be used, like that for the soil trafficability classification scheme, will depend upon the amount and type of information known, i.e. the topography, moisture condition, and the soil type and system in which the soil is classified.

116. Probability of "go" for vehicles within specific VCI categories. The probability of "go" on sloping ground may be estimated for tracked or wheeled vehicles within VCI categories. If, for example, low topography, high-moisture condition prevails and the soil is a CL with a 15% slope, the probability of "go" for tracked vehicles in category 3 (VCI 50 to 59) would be 57% (from table 13).

117. Comparison of probabilities between two vehicle categories. The probabilities of "go" may be compared for vehicles within two different categories to estimate the advantage that vehicles in one category would have over vehicles in another. For example, under the same set of conditions as those stated in the preceding paragraph, tracked vehicles in category 5 (VCI 70 to 79) would have a 35% probability of "go" (table 13). Since the table shows the probability of "go" for vehicles in category 3 to

be 57%, the difference, 57 minus 35 or 22%, indicates the advantage in performance of vehicles in category 3.

118. Comparison of probabilities for different soil types and slopes. The probabilities of "go" for vehicles within a given category may be compared for two or more different soil types and slopes in order to determine quantitatively the advantage that one route would have over another. For example, if tracked vehicles in category 3 were being considered for use in a low-topography area under high-moisture condition (table 13), the probability of "go" along route A, an ML soil with maximum slopes of 30%, would be 35%; the probability of "go" along route B, a CH soil with maximum slopes of 15%, would be 80%. Thus, route B would have a decided advantage of 45% (80 - 35) over route A from the standpoint of soil type and slope.

PART VI: CONCLUSIONS AND RECOMMENDATIONS

Conclusions

119. On the basis of the assumption of the significance of the effects of space factors (high and low topography) and time factors (wet-season and high-moisture conditions) on the trafficability of soils, and the subsequent logical-appearing variation in mean values and ranges of pertinent parameters of soil trafficability, it is concluded that the trafficability scheme devised herein fully exploits available knowledge and data and is, therefore, a feasible scheme. The scheme has the following advantages.

a. It rates soil types (both USCS and USDA) according to their median rating cone index under high and low topography, wet-season condition, and under low topography, high-moisture condition. (Data for high topography, high-moisture condition will be added at a later date.)

b. From a consideration of cumulative frequency of occurrence of rating cone index, it permits a ready estimate of the chances of successful travel of any military vehicle (whose vehicle cone index is known) on any soil type, under three of the four general space-time moisture conditions.

120. The scheme has the following limitations.

a. It considers only soils in humid, temperate climates.

b. It does not take into account thawing or recently thawed soils.

c. It ignores the specific effects of certain environmental factors known to be significant to trafficability.

121. The conclusions that follow are based on the soil information derived from the various analyses of the basic data. For the convenience of the reader, the principal paragraphs, tables, plates, or figures supporting the conclusion are given.

a. Soil strength:

(1) A soil of a particular environment generally will have a lower strength in a low-lying position (low topography) than the same soil type in a high-lying position (high topography). (Refer to paragraphs 54, 57, and 60 and plates 2, 3, and 4.)

(2) Under a given space-time moisture condition, the initial strength (cone index) is highest for the coarse-grained soils (USCS coarse-grained soils with fines and USDA sandy soils), moderate for the fine-grained soils, and lowest for the organic soils. (Refer to paragraphs 52 and 68 and plate 2.)

(3) The silty USCS coarse-grained soils with fines (SP-SM, SM) and USDA very sandy soils (S, LS) of high topography will generally show an increase in strength after repetitive traffic (indicated by a remolding index greater than one) during times of wet-season condition. These same soils, especially the SM and loamy sand types, in low topography will lose about 50% of their initial strength under repetitive traffic during times of wet-season and high-moisture conditions. (Refer to plate 3.)

(4) The remolding index of a soil decreases with a decrease in the plasticity or clay content and a decrease in the sand content of the soil type. The organic soils have the lowest remolding indexes. (Refer to paragraph 56 and fig. 5, and to paragraph 69 and fig. 10.) The slightly plastic to nonplastic silty soils and organic soils under low topography, high-moisture condition retain about 40 to 55% of their original strength, and the highly plastic soils retain about 70 to 90% of their original strength after remolding. (Refer to paragraph 69.)

(5) The strength of a remolded soil (rating cone index) under wet-season condition is highest for coarse-grained soil, moderate for plastic soil, low for predominantly silty fine-grained soil, and lowest for organic soil (refer to paragraph 59, fig. 6, and plate 4); the strength sequence of these soil types is the same under high-moisture condition except that silty coarse-grained soils are characterized by relatively low strengths slightly greater than those of silty fine-grained soils (refer to plate 4).

(6) The mean rating cone indexes for the soil types in low-topography areas range from about 15 to 58 units lower under high-moisture condition than the respective strengths under wet-season condition. The differences in strength between the two conditions range from 15 to 40 for the fine-grained materials and from 40 to 58 for the coarser soils. (Refer to paragraph 70 and plate 4.)

b. Soil-moisture content:

(1) The moisture content of a soil is influenced by its texture, plasticity, and organic content; the organic

and highly plastic or clayey soils have the highest mean moisture contents, and the coarse-grained non-plastic soils the lowest. (Refer to paragraph 62 and fig. [illegible] and to paragraph 71 and fig. 12.)

(2) The mean moisture contents of soils of low topography range from about 4 to 6% for the coarser materials, and from about 1 to 3% for the finer materials, higher under high-moisture condition than the mean soil-moisture contents for the respective soil types under wet-season condition. (Refer to paragraph 71 and plate 5.)

(3) Soils seldom attain 100% saturation. The mean per cent saturations under low topography, high-moisture condition range from about 87 to 90% for coarse-grained silty soils, 90 to 93% for fine-grained silty soils, and 93 to 97% for moderately to highly plastic soils. (Refer to paragraph 72.)

c. Density:

(1) The dry densities of soils appear to decrease with an increasing silt content and an increasing clay content above 25%, and with an increasing liquid limit and decreasing plasticity index (for a given liquid limit) of the soil type. Organic soils have the lowest densities. (Refer to paragraph 65 and fig. 8.)

(2) Soils of low-lying (low topography) positions usually have higher densities than those of the same soil type situated on high-lying (high topography) positions. (Refer to paragraph 66 and plate 6.)

d. Soil-type identification:

(1) The USCS coarse-grained soils with fines generally classify as USDA sandy soils, and the USCS fine-grained soils are comparable to the USDA silty, clayey, and loamy soils (refer to paragraph 83). The USDA clay loams, silty clay loams, and high-clay-content loams and silt loams are predominantly CL when classified in USCS terms; the silts and low-clay-content loams and silt loams are predominantly ML; and the silty clays and clays are primarily CH. (Refer to paragraph 85 and fig. 15.)

(2) Soils (USDA) of the 6- to 12-in. layer are the same as those in the 0- to 6-in. layer of the profile 71 times out of 100. (Refer to paragraph 93 and table 10.)

Recommendations

122. The recommendations that follow are made on the basis of

consideration of the general reliability of the test data and analysis information, the limitations of the scope of the analysis, and the conclusions drawn from the study.

a. Soil data on GM, GC, SP-SM, and SC soils at moisture conditions (wet-season and/or high-moisture) for which no rating cone index information is available should be collected in a planned test program for use in improving and refining the trafficability classification scheme and providing additional significant information on the probability of "go."

b. Additional soil field data, especially rating cone index information, should be collected on soil type-moisture conditions with less than 30 test observations for use in checking the validity and improving the reliability of probability of "go" information. These data should include data for CH soils of high topography, and data for SC, SM-SC, MH, OL, OH, and Pt soils of low and high topography under wet-season condition, and under high-moisture condition, respectively.

c. An analysis of rating cone index and probability of vehicle "go" should be made for the high-moisture condition of USCS and USDA soils of high topography. This study will require a preliminary analysis to establish criteria for reliably determining conditions of high moisture. Additional samples will probably be required to supplement usable data already collected.

d. Studies of the type reported herein should be made on soils located in humid, tropical climates, in arctic climates, and in areas of freeze-thaw.

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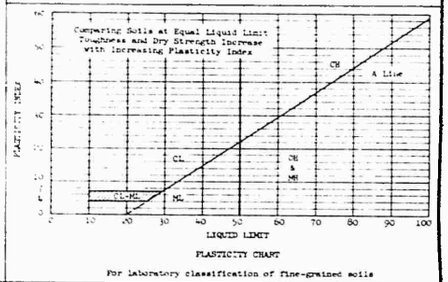
UNIFIED SOIL CLASSIFICATION
(Including Identification and Description)

Major Divisions			Group Symbols	Typical Names	Field Identification Procedures (Excluding particles larger than 3 in. and basing fractions on estimated weights)	Information Required for Describing Soils	Laboratory Classification Criteria
Coarse-grained soils: More than half of material is larger than No. 200 sieve size.	Gravels: More than half of coarse fraction is larger than No. 4 sieve size.	Clean gravels (Little or no fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines.	Wide range in grain size and substantial amounts of all intermediate particle sizes.	For undisturbed soils add information on stratification, degree of compactness, cementation, moisture conditions, and drainage characteristics.	$C_u = \frac{D_{60}}{D_{10}}$ Greater than 4 $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3 Not meeting all gradation requirements for GW
			GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines.	Predominantly one size or a range of sizes with some intermediate sizes missing.		
		Gravels with fines (Appreciable amount of fines)	GM	Silty gravels, gravel-sand-silt mixtures.	Non-plastic fines or fines with low plasticity (for identification procedures see ML below).	Give typical name; indicate approximate percentages of sand and gravel, maximum size, angularity, surface condition, and hardness of the coarse grains; local or geologic name and other pertinent descriptive information; and symbol in parentheses.	Atterberg limits below "A" line or PI less than 4 / Above "A" line with PI between 4 and 7 are borderline cases requiring use of dual symbols.
			GC	Clayey gravels, gravel-sand-clay mixtures.	Plastic fines (for identification procedures see CL below).		Atterberg limits above "A" line with PI greater than 7
	Sands: More than half of coarse fraction is smaller than No. 4 sieve size.	Clean sands (Little or no fines)	SW	Well-graded sands, gravelly sands, little or no fines.	Wide range in grain sizes and substantial amounts of all intermediate particle sizes.	Example: Silty sand, gravelly; about 20% hard, angular gravel particles 1/2 in. maximum size, rounded and subangular sand grains, coarse to fine, about 15% non-plastic fines with low dry strength, well compacted and moist in place, alluvial sand, (SM).	$C_u = \frac{D_{60}}{D_{10}}$ Greater than 6 $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3 Not meeting all gradation requirements for SW
			SP	Poorly-graded sands, gravelly sands, little or no fines.	Predominantly one size or a range of sizes with some intermediate sizes missing.		
		Sands with fines (Appreciable amount of fines)	SM	Silty sands, sand-silt mixtures.	Non-plastic fines or fines with low plasticity (for identification procedures see ML below).		Atterberg limits below "A" line or PI less than 4 / Above "A" line with PI between 4 and 7 are borderline cases requiring use of dual symbols.
			SC	Clayey sands, sand-clay mixtures.	Plastic fines (for identification procedures see CL below).		Atterberg limits above "A" line with PI greater than 7
Fine-grained soils: More than half of material is smaller than No. 200 sieve size.	Silts and Clays: Liquid limit less than 50		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.	Dilatancy (Reaction to shaking) / Quick to slow / None to very slow	For undisturbed soils add information on structure, stratification, consistency in undisturbed and remolded states, moisture and drainage conditions.	Determine percentages of gravel and sand from grain size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size) coarse-grained soils are classified as follows: Less than 5% = GW, GP, SW, SP. More than 12% = GM, GC, SM, SC. 5% to 12% = Borderline cases requiring use of dual symbols.
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.	Medium to none / Medium / Medium		
			OL	Organic silts and organic silty clays of low plasticity.	Slow to none / Slight / Slight		
	Silts and Clays: Liquid limit greater than 50		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.	Slight to medium / Slow to none / Slight to medium	Give typical name; indicate degree and character of plasticity, amount and maximum size of coarse grains; color in wet condition, odor, if any, local or geologic name and other pertinent descriptive information, and symbol in parentheses.	
			CH	Inorganic clays of high plasticity, fat clays.	High to very high / None / High		
			OH	Organic clays of medium to high plasticity, organic silts.	Medium to high / None to very slow / Slight to medium	Example: Clayey silt, brown, slightly plastic, small percentage of fine sand, numerous vertical root holes, firm and dry in place, loess, (ML).	
Highly Organic Soils			Pt	Peat and other highly organic soils.	Readily identified by color, odor, spongy feel and frequently by fibrous texture.		



PLASTICITY CHART

For laboratory classification of fine-grained soils

(1) Boundary classifications: Soils possessing characteristics of two groups are designated by combinations of group symbols. For example GW-GC, well-graded gravel-sand mixture with clay binder. (2) All sieve sizes on this chart are U. S. standard.

FIELD IDENTIFICATION PROCEDURES FOR FINE-GRAINED SOILS OR FRACTIONS

These procedures are to be performed on the minus No. 40 sieve size particles, approximately 1/64 in. For field classification purposes, screening is not intended, simply remove by hand the coarse particles that interfere with the tests.

Dilatancy (Reaction to shaking)

After removing particles larger than the No. 40 sieve size, prepare a pat of moist soil with a volume of about one cubic inch. Add enough water if necessary to make the soil soft but not sticky.

Place the pat in the open palm of one hand and shake horizontally, striking the other hand vigorously so that water appears quickly on the surface. A positive reaction consists of the appearance of water on the surface of the pat which changes to a livery consistency and becomes glossy. When the sample is squeezed between the fingers, the water and gloss disappear from the surface, the pat stiffens, and finally it cracks or crumbles. The rapidity of appearance of water during shaking and of its disappearance during squeezing assist in identifying the character of the fines in a soil.

Very fine clean sands give the quickest and most distinct reaction, whereas a plastic clay has no reaction. Inorganic silts, such as a typical rock flour, show a moderately quick reaction.

Dry strength (crushing characteristics)

After removing particles larger than the No. 40 sieve size, mold a pat of soil to the consistency of putty, adding water if too dry. Allow the pat to dry completely by sun, oven, or air-drying, and then test for strength by breaking and crumbling between the fingers. This strength is a measure of the character and quantity of the colloidal fraction contained in the soil. The dry strength increases with the plasticity.

High dry strength is characteristic for clays of the CH group. A typical inorganic silt possesses only very slight dry strength. Silty fine sands and silts have about the same slight dry strength, but can be distinguished by the feel when crushing the dried specimen. Fine sand feels gritty whereas a typical silt has the smooth feel of flour.

Toughness. (Consistency near plastic limit)

After particles larger than the No. 40 sieve size are removed, a specimen of soil about one-half inch cube in size, is molded to the consistency of putty. If too dry, water must be added and if sticky, the specimen should be spread out in a thin layer and allowed to lose some moisture by evaporation. Then the specimen is rolled out by hand on a smooth surface or between the palms into a thread about one-eighth inch in diameter. The thread is then folded and rerolled repeatedly. During this manipulation the moisture content is gradually reduced and the specimen stiffens, finally loses its plasticity, and crumbles when the plastic limit is reached.

After the thread crumbles, the pieces should be lumped together and a slight kneading action continued until the lump crumbles.

The tougher the thread near the plastic limit and the stiffer the lump when it finally crumbles, the more potent is the colloidal clay fraction in the soil. Weakness of the thread at the plastic limit and quick loss of coherence of the lump below the plastic limit indicate either inorganic clay of low plasticity, or materials such as kaolin-type clays and organic clays which occur below the A-line. Highly organic clays have a very weak and spongy feel at the plastic limit.

(CP-12600A)

Adopted by Corps of Engineers and Bureau of Reclamation, January 1952

Table 2

Mean and Standard Deviation Values for USCS and USDA Soil Types, Wet-Season Conditi

Cone Index

USCS Soil Type

USDA Soil Type

USCS Soil Type	Topography	n	C			LS			SC			SCL			C			SL			SiCL			CL		
			Low	High	All Sites	Low	High	All Sites	Low	High	All Sites	Low	High	All Sites	Low	High	All Sites	Low	High	All Sites	Low	High	All Sites	Low	High	All Sites
SP-SM	Low	n	1																							
		x̄	300																							
		s	---																							
	High	n		6																						
		x̄		175																						
		s		36																						
	All Sites	n		7	10																					
		x̄		187	187																					
		s		68	68																					
SM	Low	n	1			6												15								
		x̄	220			176												157								
		s	---			65												62								
	High	n		4			18			2								18								
		x̄		174			178			144								161								
		s		24			17			25								44								
	All Sites	n		5	9		24			3								33								
		x̄		181	181		186			144								159								
		s		80	80		27			25								67								
SC	Low	n							1									2								
		x̄							220									150								
		s							---									---								
	High	n								1								8								
		x̄								142								174								
		s								---								57								
	All Sites	n								1								10								
		x̄								142								172								
		s								---								61								
CH	Low	n																			13			1		
		x̄																			68			134		
		s																			47			---		
	High	n																			2					
		x̄																			175					
		s																			14					
	All Sites	n																			15			1		
		x̄																			172			134		
		s																			45			---		
SM-SC	Low	n																								
		x̄																								
		s																								
	High	n																								
		x̄																								
		s																								
	All Sites	n																								
		x̄																								
		s																								
CL	Low	n																			21			13		
		x̄																			39			163		
		s																			41			---		
	High	n																			4			2		
		x̄																			175			33		
		s																			25			12		
	All Sites	n																			25			15		
		x̄																			149			160		
		s																			42			42		
ML	Low	n																						1		
		x̄																						142		
		s																						---		
	High	n																								
		x̄																								
		s																								
	All Sites	n																								
		x̄																								
		s																								
CL-ML	Low	n																								
		x̄																								
		s																								
	High	n																								
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		s																								
	All Sites	n																								
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	All Sites	n																								
		x̄																								
		s																								

Note: n = number of samples; x̄ = mean or average; s = one standard deviation.

Table 2

Standard Deviation Values for USCS and USDA Soil Type, Wet-Season Condition, 6- to 12-in. Layer

Cone Index

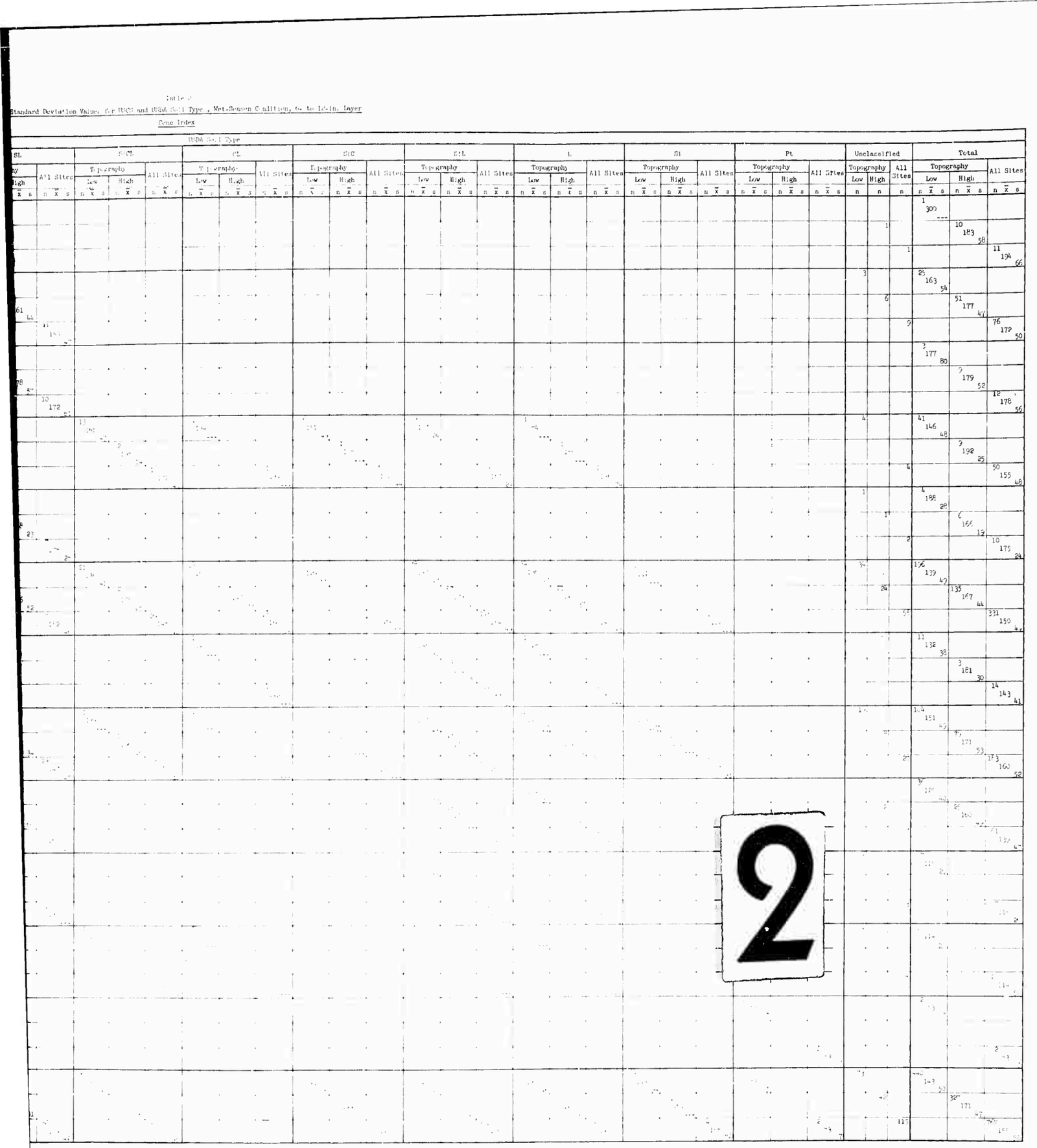


Table 2

Mean and Standard Deviation Values fo

USCS Soil Type		S			SM			SC			SM-SC			CL			CL-ML			ML			C			MH			CH			OH			Peat			Total		
		Low	High	All Sites	Low	High	All Sites	Low	High	All Sites	Low	High	All Sites	Low	High	All Sites	Low	High	All Sites	Low	High	All Sites	Low	High	All Sites	Low	High	All Sites	Low	High	All Sites	Low	High	All Sites	Low	High	All Sites	Low	High	All Sites
SP-SM	n	1		10	6	15	33	1	2	10	3	3	7	1	3	7	2	2	5	11	12	24	1	1	2	1	1	2	12	18	30	1	1	2	2	2	4	42	57	99
	$\bar{x}$	0.4	1.73	1.65	0.54	1.44	1.24	1.65	0.45	0.98	1.2	0.74	0.97	0.42	0.71	0.58	0.67	0.42	0.55	0.74	1.17	1.01	1.42	0.71	1.07	0.42	0.42	0.42	1.33	0.91	1.07	0.42	0.42	0.42	0.42	0.42	0.42	1.30	1.65	1.57
	s	---	0.48	0.52	0.30	0.33	0.52	0.52	0.42	0.44	0.32	0.38	0.47	---	0.38	0.47	---	---	0.14	0.51	0.43	0.52	---	---	---	---	---	---	0.47	0.17	0.31	---	---	---	---	---	---	0.53	0.47	0.51
SM	n	1	7	8	6	14	24	2	2	4	2	2	4	1	1	2	1	1	2	2	3	5	1	1	2	1	1	2	3	2	5	1	1	2	1	1	2	19	17	36
	$\bar{x}$	1.66	1.55	1.57	0.54	1.14	1.24	0.98	0.42	0.70	1.2	0.74	0.97	0.42	0.71	0.58	0.67	0.42	0.55	0.74	1.17	1.01	1.42	0.71	1.07	0.42	0.42	0.42	1.33	0.91	1.07	0.42	0.42	0.42	0.42	0.42	0.42	1.30	1.65	1.57
	s	---	0.47	0.44	0.30	0.32	0.52	0.52	0.42	0.44	0.32	0.38	0.47	---	0.38	0.47	---	---	0.14	0.51	0.43	0.52	---	---	---	---	---	---	0.47	0.17	0.31	---	---	---	---	---	---	0.53	0.47	0.51
SC	n							1		1																														
	$\bar{x}$							0.65		0.65																														
	s							---		---																														
CH	n																						13		13														
	$\bar{x}$																						1.03		1.03														
	s																						0.21		0.21														
SM-SC	n																																					
	$\bar{x}$																																					
	s																																					
CL	n																																					
	$\bar{x}$																																					
	s																																					
ML	n																																					
	$\bar{x}$																																					
	s																																					
CL-ML	n																																					
	$\bar{x}$																																					
	s																																					
MI	n																																					
	$\bar{x}$																																					
	s																																					
MH	n																																					
	$\bar{x}$																																					
	s																																					
PT	n																																					
	$\bar{x}$																																					
	s																																					
Total	n	2	17	19	12	29	57	3	2	5	2	2	4	1	4	9	3	3	7	13	15	29	2	1	3	1	1	2	15	20	35	1	1	2	3	3	6	61	74	135
	$\bar{x}$	1.30	1.65	1.57	0.54	1.30	1.24	0.98	0.42	0.74	1.2	0.74	0.97	0.42	0.71	0.58	0.67	0.42	0.55	0.74	1.17	1.01	1.42	0.71	1.07	0.42	0.42	0.42	1.33	0.91	1.07	0.42	0.42	0.42	0.42	0.42	0.42	1.30	1.65	1.57
	s	---	0.47	0.44	0.30	0.33	0.52	0.52	0.42	0.44	0.32	0.38	0.47	---	0.38	0.47	---	---	0.14	0.51	0.43	0.52	---	---	---	---	---	---	0.47	0.17	0.31	---	---	---	---	---	---	0.53	0.47	0.51

Note: n = number of samples; $\bar{x}$ = mean or average; s = standard deviation

Table 4

Mean and Standard Deviation Values for USCS and USDA Soil Types, Wet-Season Condition, 6 to 12-in. Layer

Remolding Index

Wet-Season Condition, 6- to 12-in. Layer

Type

CL						SiC						SiL						L						Si						Pt						Unclassified			Total					
Topography				All Sites		Topography				All Sites		Topography				All Sites		Topography				All Sites		Topography				All Sites		Topography				All Sites		Topography		All Sites	Topography				All Sites		
High						Low			High			Low			High			Low			High			Low			High			Low			High			Low	High		Low			High		
n	$\bar{x}$	s				n	$\bar{x}$	s				n	$\bar{x}$	s				n	$\bar{x}$	s				n	$\bar{x}$	s				n	$\bar{x}$	s				n			n	$\bar{x}$	s			

Table 4

Mean and Standard Deviation Values for USCS and USDA Soil Types, Wet-Season Condition, [illegible]

Rating Cone Index

USCS Soil Type	Topography		S			M			SC			MCl			C			CL			SiCl			CL		
			Topography		All Sites	Topography		All Sites	Topography		All Sites	Topography		All Sites	Topography		All Sites	Topography		All Sites	Topography		All Sites	Topography		All Sites
			Low	High		Low	High		Low	High		Low	High		Low	High		Low	High		Low	High		Low	High	
			n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s
SP-SM	Low		1 282 ---																								
	High			9 252 61																							
	All Sites				10 255 58																						
SM	Low		1 300 ---			1 134 ---												1 103 ---								
	High			7 251 45			4 154 53						2 137 14						4 171 72							
	All Sites				8 257 62			28 217 42						2 137 14						33 140 75						
SC	Low											1 144 ---						2 162 136								
	High																		4 154 48							
	All Sites													3 147 12						16 146 63						
CH	Low														13 130 ---						1 117 ---			1 117 ---		
	High																									
	All Sites																			1 163 ---						
SM-SC	Low																	1 62 ---								
	High																		4 131 ---							
	All Sites																									
CL	Low																									
	High																									
	All Sites																									
ML	Low																									
	High																									
	All Sites																									
CL-ML	Low																									
	High																									
	All Sites																									
[illegible]	Low																									
	High																									
	All Sites																									
[illegible]	Low																									
	High																									
	All Sites																									
[illegible]	Low																									
	High																									
	All Sites																									
[illegible]	Low																									
	High																									
	All Sites																									
[illegible]	Low																									
	High																									
	All Sites																									

Note: n = number of samples; x̄ = mean, or average; s = the standard deviation.

Table 4

Standard Deviation Values for USCS and USDA Soil Types, Wet-Season Condition, 6- to 12-in. Layer

Rating Cone Index

| USDA Soil Type | | |

Mean and Standard Deviation Va

USCS Soil Type			S				IS				SC				SCL				C				SL				Topog
			Topography			All Sites	Topography			All Sites	Topography			All Sites	Topography			All Sites	Topography			All Sites	Topography		All Sites		Topog
			Low		High		Low		High		Low		High		Low		High		Low		High		Low		High				Low
			n	x̄	s	n x̄ s	n	x̄	s	n x̄ s	n	x̄	s	n x̄ s	n	x̄	s	n x̄ s	n	x̄	s	n x̄ s	n	x̄	s	n x̄ s	n	x̄	s	n x̄ s	n	x̄	s
ST-SM	Topography	Low	1	16.6	---																									
		High				9 7.7 1.8																								
		All Sites				10 8.6 3.3																								
SM	Topography	Low	1	7.3	---		5	20.0	8.8														13	22.7	9.1					
		High				7 14.5 6.2				15 13.7 4.3								2 20.6 4.6								17 16.5 4.1				
		All Sites				8 13.6 6.2				23 15.1 6.3								2 20.6 4.6								30 19.4 7.2				
SC	Topography	Low													1	14.5	---						2	12.4	4.3					
		High																1 17.7 ---								8 19.1 2.1				
		All Sites																2 16.1 2.3								10 17.6 3.6				
CH	Topography	Low																	12	39.1	4.7						13	29.4	4.4
		High																			5 29.7 6.2									
		All Sites																				17 34.3 4.2								
SM-SC	Topography	Low																					3	18.4	6.5					
		High																1 14.9 ---								4 16.7 2.3				
		All Sites																1 14.9 ---								7 17.4 4.2				
CL	Topography	Low																	1	23.2	---		4	22.1	5.2				21	29.2 4.3
		High																					3	21.2	12.2					
		All Sites																				1 23.3 ---				7 21.7 4.2				
MH	Topography	Low																	1	32.4	---									
		High																												
		All Sites																				1 32.4 ---								
ML	Topography	Low																					12	24.4	11.6				1	36.3 ---
		High																								12 25.6 4.7				
		All Sites																								23 26.1 4.8				
CL-ML	Topography	Low																					2	18.2	3.1					
		High																								3 19.6 4.1				
		All Sites																								5 18.8 3.7				
OL	Topography	Low																					1	27.2	---					
		High																												
		All Sites																								1 27.2 ---				
OH	Topography	Low																	1	47.5	---						1	24.8	---	
		High																												
		All Sites																				1 47.5 ---								
Pt	Topography	Low																												
		High																												
		All Sites																												
Total	Topography	Low	2	12.0	0.6		5	20.0	6.4						1	14.5	---	1 17.7 ---	1	35.4	10.2		36	23.0	3.6		36	24.6	4.5	
		High				15 10.7 5.4				15 13.7 4.8				1 34.5 ---				2			4 29.7 6.2				47 20.0 5.3				1
		All Sites				18 10.8 5.3				23 15.1 6.3				1 34.5 ---				16 17.4 5.4				2 30.6 1.0				83 21.3 7.2				

Note: n = number of samples; x̄ = mean or average; s = one standard deviation.

Table 5

Mean and Standard Deviation Values for USCS and USDA Soil Types, Wet-Season Condition, 6- to 12-in. Layer

Moisture Content, Per Cent Dry Weight

USDA Soil Type

C		SL			SiCL			CL			SiC			SiL			L			S			
graphy	All Sites	Topography		All Sites	Topography		All Sites	Topography		All Sites	Topography		All Sites	Topography		All Sites	Topography		All Sites	Topography		All Sites	Topogr
High		Low	High		Low	High		Low	High		Low	High		Low	High		Low	High		Low	High		Low
n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s	n x̄ s
		13 22.7 7.1																					
			17 16.9 4.1																				
				30 19.4 7.2																			
		2 12.4 4.3																					
			3 19.4 2.1																				
				17 17.6 3.5																			
					33 21.4 4.4			1 21.1 ---			1 34.1 ---			5 17.4 1.7			1 48.0 ---						
5 29.7 6.2						2 32.0 ---												1 21.7 ---					
	17 30.3 ---						14 21.4 ---								3 27.4 1.7				2 34.8 15.6				
		18 18.4 5.6																					
			12 17.7 2.4																				
				17 17.4 3.8																			
		22.1 ---			21 24.2 4.3												32 24.0 5.3							
			21.3 ---			24.7 ---												21 24.5 4.4					
1 23.5 ---				31 ---			2 ---												53 25.4 4.9				
																	1 43.0 ---						
32 ---																			1 63.0 ---				
																				2 32.4 3.4			
																					1 31.1 ---		
																						3 32.0 2.5	

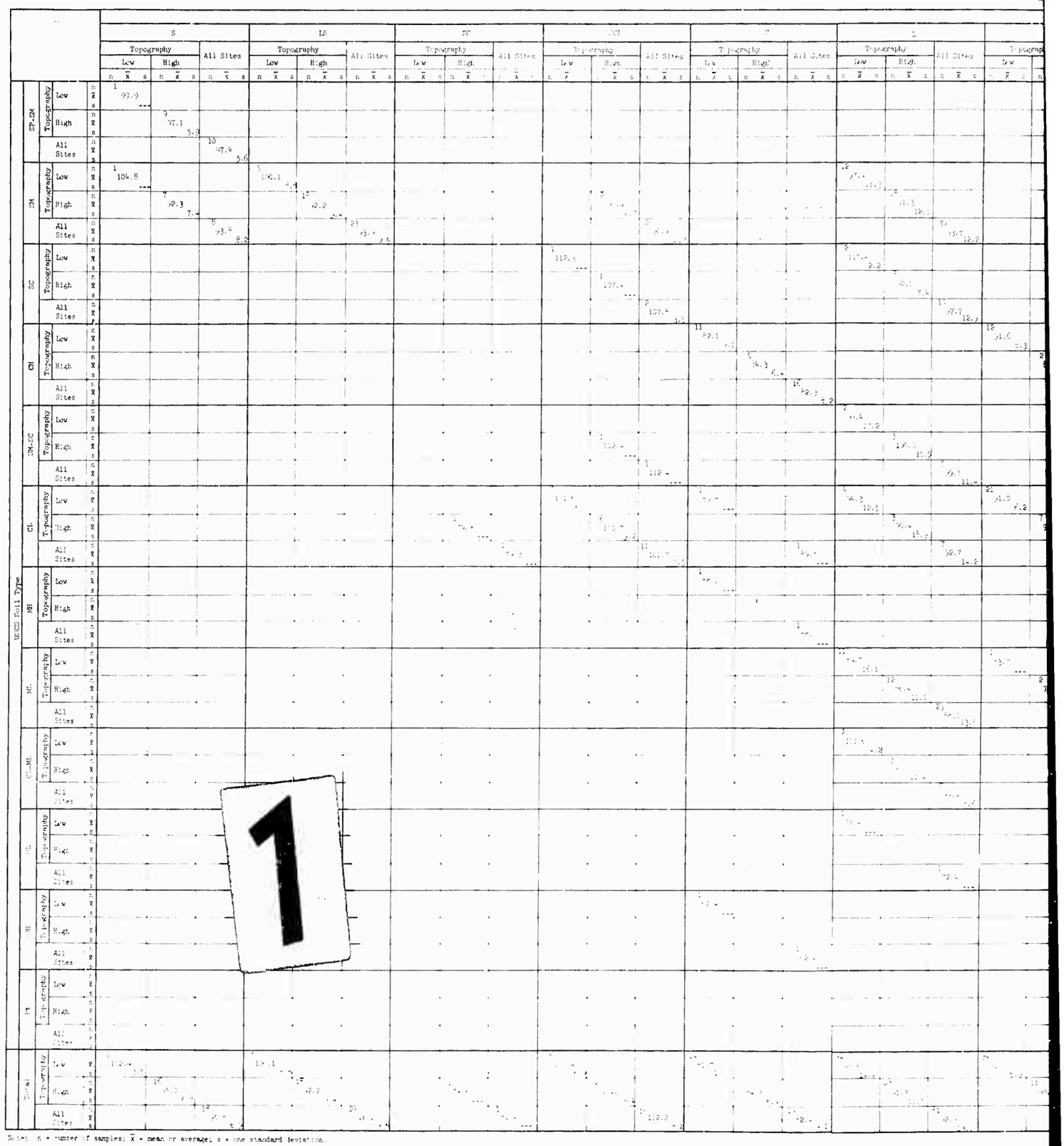
, Wet-Season Condition, 6- to 12-In. Layer

Weight

l Type

CL									SiC									SiL									L								
ography						All Sites			Topography						All Sites			Topography						All Sites			Topography						All Sites		
	High								Low			High						Low			High						Low			High					
s	n	x̄	s			n	x̄	s	n	x̄	s	n	x̄	s	n	x̄	s	n	x̄	s	n	x̄	s	n	x̄	s	n	x̄	s	n	x̄	s	n	x̄	s	n	x̄	s
									6	34.1	3.7							3	17.6	3.7							1								
												2	24.2																						
						1	41.1																												

Mean and Standard Deviation Values



Note: n = number of samples; $\bar{x}$ = mean or average; s = one standard deviation.

Table

Mean and Standard Deviation Values for USGS and USDA Soil Types, Wet-Season Condition, for 0- to 12-in. Layer

Dry Density, Pounds per Cubic Foot

USDA Soil Type

| | | |

...-Season Condition, 0- to 12-in. Layer

...pe

...graphy		All Sites		Topography		All Sites		Topography		All Sites		Topography		All Sites		Topography		All Sites		Topography		All Sites		Topography		All Sites		Topography		All Sites
	High			Low	High			Low	High			Low	High			Low	High			Low	High			Low				Low	High	
n	x̄ s	n	x̄ s	n	x̄ s	n	x̄ s	n	x̄ s	n	x̄ s	n	x̄ s	n	x̄ s	n	x̄ s	n	x̄ s	n	x̄ s	n	x̄ s	n	x̄ s	n	x̄ s	n	x̄ s
																												1 99.9 ---		
																													10 97.8 6.0		
																														11 98.0 5.7
																												21 97.3 10.8		
																													51 92.5 9.7		
																														72 93.9 10.2
																												3 115.7 3.3		
																													9 94.8 8.6		
																														12 100.0 120
																												36 84.6 10.7		
																													9 85.7 7.2		
																														45 84.8 10.0
																												3 98.3 12.1		
																													5 102.9 3.2		
																														8 101.1 9.9
																												187 92.9 7.7		
																													131 89.0 9.7		
																														318 91.3 8.6
																												11 70.8 11.6		
																													3 66.3 12.6		
																														14 69.9 11.4
																												87.3 10.4		
																													78 83.7 10.8		
																														176 85.7 10.7
																												35 4.3 7.7		
																													25 92.9 8.8		
																														60 93.7 3.2
																												6 82.1 12.1		
																														6 82.3 12.1
																												63.1 12.2		
																														6 63.1 12.2

Table 7

Mean and Standard Deviation Values for USCS and USDA Soil Types, 6- to 12-in. Layer

Low Topography, High-Moisture Condition

Soil Type Symbol	Cone Index			Remolding Index			Rating Cone Index			Moisture Content, %			Per Cent Saturation		
	n	$\bar{x}$	s	n	$\bar{x}$	s	n	$\bar{x}$	s	n	$\bar{x}$	s	n	$\bar{x}$	s
USCS															
CH	28	118	49	28	0.83	0.19	28	97	49	25	36.3	9.5	21	96.1	4.2
SC	No data														
MH	9	117	34	9	0.69	0.23	9	83	40	8	47.4	12.9	6	92.0	4.9
SM-SC	2	166	16	2	0.54	0.09	2	82	16	2	23.0	2.8	1	77.0	---
CL	159	118	47	159	0.61	0.19	159	78	39	152	28.5	6.6	124	93.4	5.0
SP-SM	No data														
SM	21	132	51	21	0.51	0.36	21	69	57	18	26.5	8.0	14	87.1	5.9
ML	63	126	45	63	0.43	0.17	63	55	33	58	32.5	8.3	40	91.6	5.8
OL	1	87	--	1	0.56	--	1	49	--	1	46.0	---	--	--	---
CL-ML	27	113	42	27	0.40	0.13	27	46	20	27	25.7	5.0	22	89.4	5.9
OH	7	87	45	7	0.46	0.20	7	35	14	5	94.5	54.6	--	--	---
Pt	2	83	7	2	0.56	0.11	2	46	5	1	42.7	---	--	--	---
All soils	319	118	47	319	0.57	0.23	319	71	64	297	31.2	13.4	229	--	---
USDA															
SC	No data														
SCL	6	135	69	6	0.75	0.15	6	108	64	5	24.7	3.6	5	93.6	4.3
CL	18	140	69	18	0.75	0.21	18	105	54	16	29.2	6.3	13	96.7	4.5
SiC	15	118	58	15	0.82	0.16	15	98	54	14	35.9	8.2	11	93.5	4.2
C	12	102	36	12	0.88	0.24	12	88	38	10	42.0	11.9	4	100.0	2.6
SiCL	28	117	47	28	0.72	0.16	28	82	38	27	31.6	7.2	24	96.4	4.0
S (fine)	No data														
SiL	131	122	44	131	0.50	0.17	131	68	32	125	30.7	9.2	92	92.8	5.4
SL	22	132	45	22	0.52	0.33	22	67	43	19	27.0	10.6	13	89.4	5.6
LS	6	132	45	6	0.45	0.23	6	61	49	5	26.3	6.5	5	87.6	8.3
L	43	109	41	43	0.53	0.19	43	57	29	40	28.6	8.6	30	91.6	4.9
Si	2	96	37	2	0.44	0.06	2	41	11	1	34.8	---	1	94.0	---
Pt	2	83	7	2	0.56	0.11	2	46	5	1	42.7	---	--	--	---
All soils	285	119	48	285	0.58	0.23	285	73	66	263	30.5	9.4	198	--	---

Note: n = number of samples; $\bar{x}$ = mean or average; s = one standard deviation.

Table 8

Frequency of USDA Soil Types Occurring as USCS Soil Types

USDA Soil Type			USCS Soil Type																
			Coarse-Grained Soils with Fines						Fine-Grained Soils					Organic Soils			Total	
			SM	SC	SP-SM	SM	SM-SC	SC	ML	CL-ML	MI	CL	CH	OL	OH	Pt	%	n
Sandy Soils	S	%			47	50	3										100	
		n			21	22	1											44
	LS	%				95		2									100	
		n				56		1										57
	SiL	%	*			41	8	14	19	4		9		2	2		100	
		n	1			85	17	28	40	9		19		5	4			207
	CL	%				11	3	25	7			54					100	
		n				3	1	7	2			15						28
	C	%						50				50					100	
		n						1				1						2
Clayey, Silty, and Loamy Soils	Lt	%	*	*					22	11	*	52	3	3	6		100	
		n	1	1					36	19	1	87	5	5	10			165
	SiL	%							36	10	3	45	2	2	2		100	
		n							172	47	16	215	12	9	10			461
	Si	%							91			9					100	
		n							10			1						11
	SL	%							5		3	75	15		2		100	
		n							2		1	30	6		1			40
	SiCL	%							1	1	1	67	27		3		100	
		n							1	1	1	51	20		2			76
	SiC	%							5			24	71				100	
		n							1			5	15					21
	C	%							3		10	13	66		8		100	
		n							1		4	5	25		3			38
Organic Soils	Pt	%														100	100	
		n														6		6
Total samples																		1176

n Number of samples.
* Less than 1%.
† Prefixed with the term gravelly, sandy, or stony for SM or SC soil types.

Sample Interpretation

	CL
SiL	45
	215

45% of all SiL samples were CL. The circle indicates that a greater number of SiL samples occurred as CL than as any other USCS type. 215 samples were classified as SiL and CL.

Table [illegible]

Frequency of USCS Soil Types Occurring in USDA Soil Types

USCS Soil Type		USDA Soil Type: Sandy Soils					Clayey, Silty, and Loamy Soils							Organic Soils	Total	
		S	LS	SL†	SCL	SC	LL	SiL	Si	CL	SiCL	SiC	C	Pt	%	n
Coarse-Grained Soils with Fines	GM %			50			50								100	
	n			1			1									2
	GC %						100								100	
	n						1									1
	SL-SM %	100													100	
	n	21														21
	SM %	13	[illegible]	51	2										100	
	n	22	[illegible]	[illegible]	3											166
	SM-SC %	[illegible]		[illegible]											100	
	n	1		17	1											19
	SC %	3	[illegible]	[illegible]	3										100	
	n	1	[illegible]	[illegible]	1											37
Fine-Grained Soils	ML %			[illegible]			14	[illegible]							100	
	n			[illegible]	2		[illegible]	172	10	2	1	1	1			265
	CL-ML %			12			25	62			1				100	
	n			[illegible]			[illegible]	47			1					76
	MH %						4	70		4	4		18		100	
	n						1	16		1	1		4			23
	CL %			4	[illegible]		21	50		7	12	1	1		100	
	n			[illegible]	[illegible]	1	[illegible]	215	1	30	51	5	5			428
	CH %						[illegible]	[illegible]		7	24	[illegible]	30		100	
	n						[illegible]	12		6	20	15	25			83
Organic Soils	OL %			[illegible]			[illegible]	[illegible]							100	
	n			[illegible]			[illegible]									19
	OH %			14			[illegible]	[illegible]		3	7		10		100	
	n			[illegible]			[illegible]	[illegible]		1	2		3			30
	Pt %													100	100	
	n													6		6
Total samples																1176

n Number of samples.
* Less than 1%.
† Prefixed with the term gravelly, [illegible] for GM or GC soil types.

[illegible] Sample Interpretation

[illegible] of all [illegible] samples were [illegible]. The [illegible] indicates that a greater number of [illegible] samples occurred [illegible] than [illegible] [illegible] samples were [illegible] [illegible].

Table 10

Frequency of USDA Soil Types of 0- to 6-In. Layer Occurring in 6- to 12-In. Layer

USDA Soil Type, 0- to 6-In. Layer		USDA Soil Type, 6- to 12-In. Layer														Total	
		FC	FCl	Cl	SiC	C	SiCl	S(fr)	SiL	SL	LS	L	Si	Pt		%	n
FC	%																
	n																
FCl	%		17	16		50	17									100	
	n		1	1		3	1										6
Cl	%			53	3	10	21		3			10				100	
	n			12	1	3	5		1			3					28
SiC	%	4			2	36	14		14			7				100	
	n				4	6	2		2			1					14
C	%	3		4	1	34	7		7	4						100	
	n	1		1		11	2		2	1							27
SiCl	%			5	4	11	13		22			3				100	
	n			2	3	4	10		8			1					37
S(fr)	%							71		4	10		4			100	
	n							24		1	3		1				29
SiL	%								28	1		7	1			100	
	n				3	1	6		41	4		35	6				514
SL	%		3	2		2			6	13	5	7				100	
	n		13	5		4		1	14	15	11	15	1				224
LS	%	1		1				23	1		54					100	
	n	1	3	1				17	1	12	41						76
L	%				1	1	1		12	12		62				100	
	n				2	2	2		21	21		104					169
Si	%												43			100	
	n												3				7
Pt	%				13							12		75		100	
	n				1							1		6			8
Total																1140	
Number of sites with 0- to 6-In. layer the same soil type as that of the 6- to 12-In. layer																711	
Frequency of occurrence (%) with 0- to 6-In. layer the same as that of the 6- to 12-In. layer																71%	

Number of sites

* Less than 1%.

Sites with same soil type in 0- to 6-In. and 6- to 12-In. layers

Interpretation Example

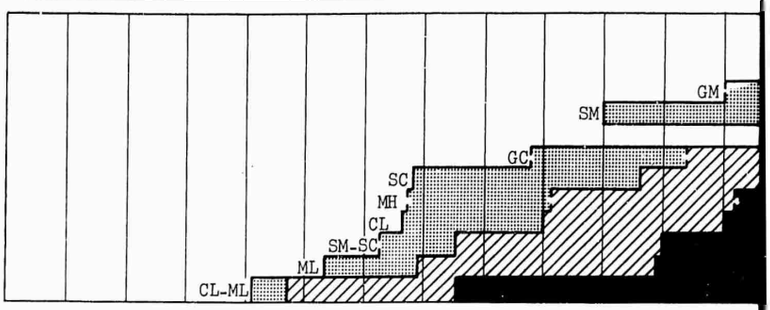
Of the six sites with SCL (sandy clay loam) in the 0- to 6-In. layer, one had the same soil type (FCl), one had Cl, three or 50% had C, and one had SiCl in the underlying 6- to 12-In. layer of the soil profile. The 50% under C, 6- to 12-In. layer, is encircled because C is the most frequent USDA soil type occurring below SCL.

Table 11

Soil Trafficability Classification in USCS Terms

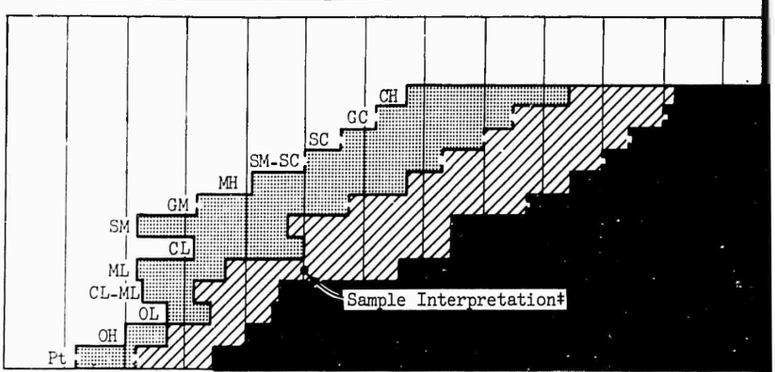
Soil Type Symbol	Strength Measurements Probable Range* CI	RI	RCI	Mean RCI	Effects of Slipperiness**	Stickiness
GW, GP, SW, SP	---	---	---	---	None	None
SP-SM	125-241	1.19-2.17	196-316	256	None	None
GM	---	---	---	230†	None	None
SM	130-224	0.77-1.83	137-287	212	None	None
CH	167-217	0.84-1.10	158-210	184	Slight	Moderate
GC	---	---	---	165†	Slight	Slight
SC	127-231	0.72-0.98	104-208	156	Slight	Slight
MH	151-211††	0.32-1.00††	64-160††	112††	Slight	Slight
CL	123-211	0.59-0.95	82-180	131	Slight	Slight
SM-SC	147-185	0.47-1.13	65-211	138	Slight	None
ML	118-224	0.46-1.02	67-189	128	Slight	None
CL-ML	111-209	0.44-0.72	54-136	95	Slight	None

High Topography, Wet-Season Condition



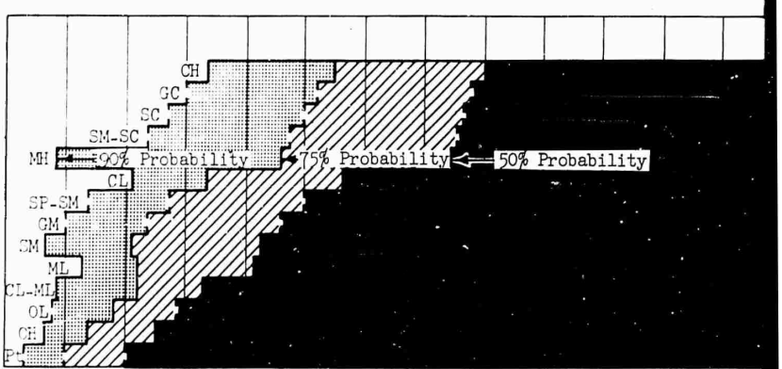
Soil Type Symbol	Strength Measurements Probable Range* CI	RI	RCI	Mean RCI	Effects of Slipperiness**	Stickiness
GW, GP, SW, SP	---	---	---	---	None	None
SP-SM	300	0.94	282	282†	None	None
CH	98-194	0.74-1.14	81-193	137	Severe	Severe
GC	---	---	---	130†	Moderate	Moderate
SC	97-257††	0.59-1.21††	61-255††	158††	Moderate	Moderate
SM-SC	160-216††	0.45-1.31††	72-208††	140††	Slight	None
MH	94-170	0.51-0.99	48-162	105	Severe	Moderate
GM	---	---	---	125†	Slight	None
SM	109-217	0.29-1.03	34-188	111	Slight	None
CL	90-188	0.46-0.88	46-146	96	Moderate	Moderate
ML	102-200	0.27-0.81	34-134	84	Moderate	Slight
CL-ML	85-165	0.31-0.69	34-96	65	Moderate	Slight
OL	95-135	0.38-0.74	41-89	65	Moderate	Slight
OH	64-164	0.32-0.78	14-110	62	Moderate	Slight
Pt	76-90††	0.45-0.67††	41-51††	46††	Moderate	Slight

Low Topography, Wet-Season Condition



Soil Type Symbol	Strength Measurements Probable Range* CI	RI	RCI	Mean RCI	Effects of Slipperiness**	Stickiness
GW, GP, SW, SP	---	---	---	---	None	None
CH	69-167	0.64-1.02	48-142	97	Severe	Severe
GC	---	---	---	90†	Severe	Moderate
SC	---	---	---	---†	Severe	Moderate
SM-SC	150-182††	0.45-0.63††	66-96††	82††	Moderate	Slight
MH	83-151	0.46-0.92	43-123	83	Severe	Severe
CL	71-165	0.42-0.90	33-117	75	Severe	Moderate
SP-SM	---	---	---	74†	Slight	None
GM	---	---	---	72†	Slight	Slight
SM	81-183	0.15-0.87	12-120	69	Slight	Slight
ML	91-171	0.26-0.60	22-54	55	Severe	Slight
CL-ML	71-135	0.27-0.53	26-62	44	Severe	Slight
OL	87††	0.56††	43††	43††	Moderate	Slight
OH	42-132	0.26-0.66	21-43	35	Severe	Slight
Pt	76-90††	0.45-0.61††	41-81††	46††	Severe	Slight

Low Topography, High-Moisture Condition



PROBABILITY OF VEHICLE "GO" ON LEVEL TERRAIN

Excellent	Greater than 90%	Good reliability, based on analysis of data	
Good	76 to 90%	Fair reliability, based on judgement	
Fair	50 to 75%		
Poor	Less than 50%		

Note: Vehicle category and cone index range are given in paragraph 97.

* Based on +1 and -1 standard deviation from the mean.

** Applies only to wheeled vehicles without traction devices.

† Estimated from textural, plasticity, and organic properties of soil under given moisture condition.

†† Based on analysis of less than five samples.

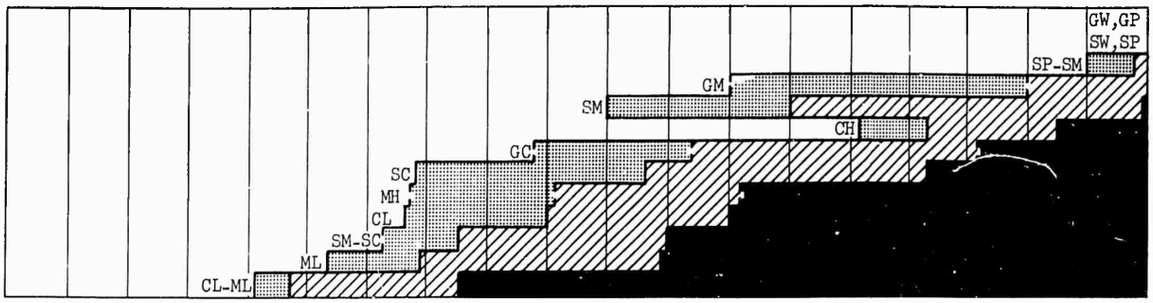
‡ A vehicle with a vehicle cone index of 60 would have a 50-75% chance of "go" on an ML soil of low topography, wet-season condition.

Table 11

Soil Trafficability Classification in USCS Terms

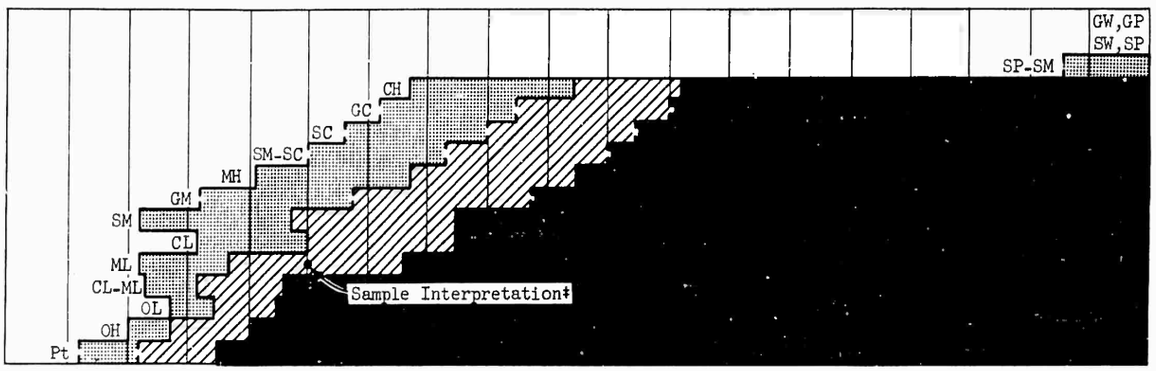
rements		Effects of	
RCI	Mean RCI	Slipper-iness**	Stick-iness
---	---	None	None
196-316	256	None	None
---	230†	None	None
137-287	212	None	None
158-210	184	Slight	Moderate
---	165†	Slight	Slight
104-208	156	Slight	Slight
64-160††	112††	Slight	Slight
82-180	131	Slight	Slight
65-211	138	Slight	None
67-189	128	Slight	None
54-136	95	Slight	None

High Topography, Wet-Season Condition



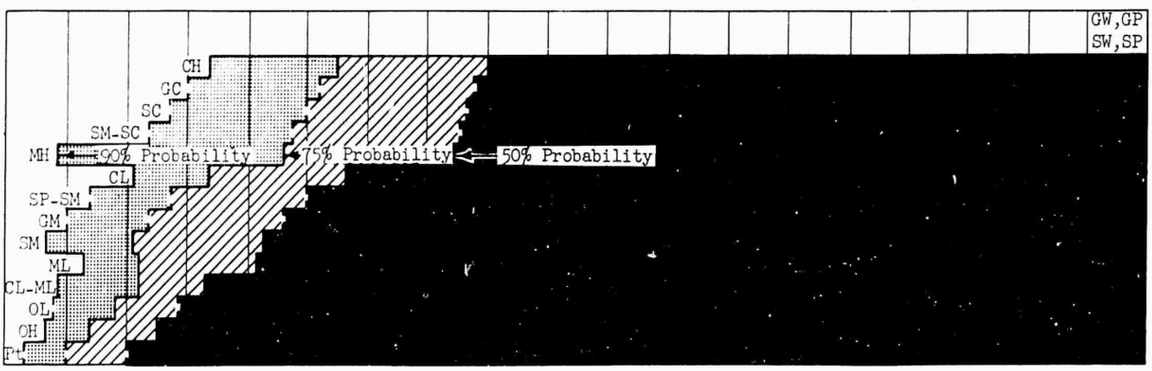
---	---	None	None
282	282†	None	None
81-193	137	Severe	Severe
---	130†	Moderate	Moderate
61-255††	158††	Moderate	Moderate
72-208††	140††	Slight	None
48-162	105	Severe	Moderate
---	125†	Slight	None
34-188	111	Slight	None
46-146	96	Moderate	Moderate
34-134	84	Moderate	Slight
34-96	65	Moderate	Slight
41-89	65	Moderate	Slight
14-110	62	Moderate	Slight
41-91††	46††	Moderate	Slight

Low Topography, Wet-Season Condition



Low Topography, High-Moisture Condition

---	---	None	None
48-146	97	Severe	Severe
---	90†	Severe	Moderate
---	88†	Severe	Moderate
66-98††	82††	Moderate	Slight
43-123	83	Severe	Severe
39-117	78	Severe	Moderate
---	74†	Slight	None
---	72†	Slight	Slight
12-126	69	Slight	Slight
22-88	55	Severe	Slight
26-66	46	Severe	Slight
42††	40††	Moderate	Slight
21-49	35	Severe	Slight
41-91††	46††	Severe	Slight



BILITY OF VEHICLE "GO" ON LEVEL TERRAIN

n 90%

Good reliability, based on analysis of data

Fair reliability, based on judgement

%

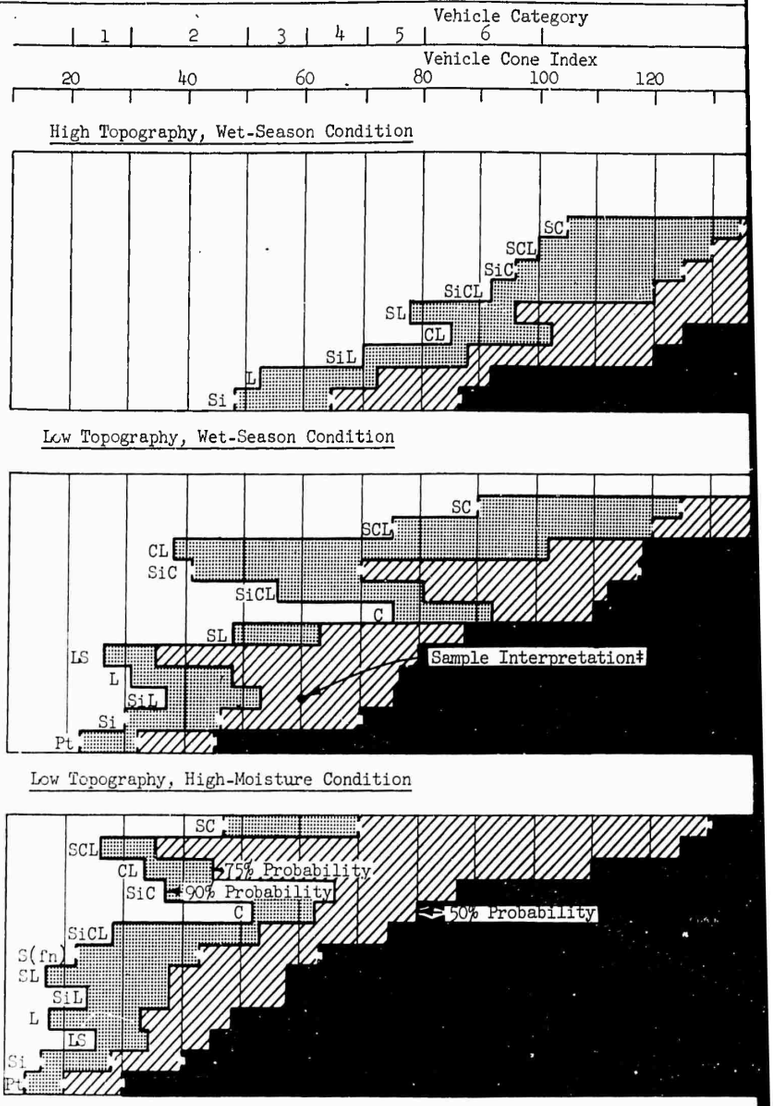
e index range are given in paragraph 97.
ard deviation from the mean.
vehicles without traction devices.
plasticity, and organic properties of soil under given moisture condition.
s than five samples.
cone index of 60 would have a 50-75% chance of "go" on an ML soil of low topography, wet-season condition.

2

Table 12

Soil Trafficability Classification in USDA Terms

Soil Type Symbol	Strength Measurements: Probable Range* CI	RI	RCI	Mean RCI	Effects of: Slipperiness**	Stickiness
High Topography, Wet-Season Condition						
LS	135-249	1.16-1.80	201-300	254	None	None
S(fn)	130-218	1.18-2.12	190-300	251	None	None
C	167-227	0.80-1.14	159-219	189	Slight	Moderate
SC	---	---	---	161†	Slight	Slight
SCL	137-229	0.74-0.96	110-202	156	Slight	Slight
SiC	125-163††	0.23-1.17††	23-187††	105††	Slight	Moderate
SiCL	156-208	0.66-0.94	108-188	148	Slight	Slight
SL	122-204	0.42-1.46	81-215	148	None	None
CL	114-180	0.77-0.97	86-172	129	Slight	Slight
SiL	126-222	0.54-0.88	76-172	124	Slight	Slight
L	106-190	0.51-0.87	63-147	105	Slight	Slight
Si	202††	0.54††	108††	108††	Slight	None
Low Topography, Wet-Season Condition						
S(fn)	212-300††	0.79-1.81††	278-300††	291††	None	None
SC	---	---	---	150†	Moderate	Moderate
SCL	113-237	0.60-0.98	92-180	136	Moderate	Moderate
CL	95-211	0.57-1.01	69-175	122	Moderate	Moderate
SiC	85-197	0.67-1.07	66-184	125	Severe	Severe
SiCL	100-196	0.59-0.99	62-180	121	Moderate	Moderate
C	80-180	0.72-1.20	68-176	122	Severe	Severe
SL	111-195	0.32-1.10	46-168	107	Slight	Slight
LS	111-241	0.24-0.84	20-168	104	Slight	None
L	89-181	0.40-0.90	37-143	90	Moderate	Moderate
SiL	96-190	0.38-0.76	41-125	83	Moderate	Moderate
Si	49-237††	0.40-0.48††	27-101††	64††	Moderate	Slight
Pt	76-90††	0.45-0.67††	41-51††	46††	Moderate	Slight
Low Topography, High-Moisture Condition						
SC	---	---	---	115†	Severe	Severe
SCL	66-204	0.60-0.90	44-172	108	Severe	Moderate
CL	71-209	0.54-0.96	51-159	105	Severe	Moderate
SiC	60-176	0.66-0.98	44-152	98	Severe	Severe
C	66-138	0.64-1.12	50-126	88	Severe	Severe
SiCL	70-164	0.54-0.86	44-120	82	Severe	Moderate
S(fn)	---	---	---	74†	Slight	None
SL	87-177	0.19-0.85	24-110	67	Moderate	Slight
SiL	78-166	0.33-0.67	36-100	68	Severe	Moderate
L	68-150	0.34-0.72	28-86	57	Severe	Moderate
LS	87-177	0.22-0.68	12-110	61	Slight	Slight
Si	59-133††	0.38-0.50††	30-52††	41††	Severe	Slight
Pt	76-90††	0.45-0.67††	41-51††	46††	Severe	Slight



PROBABILITY OF VEHICLE "GO" ON LEVEL TERRAIN

Excellent	Greater than 90%	Good reliability, based on analysis of data	
Good	76 to 90%	Fair reliability, based on judgement	
Fair	50 to 75%		
Poor	Less than 50%		

Note: Vehicle category and cone index range are given in paragraph 97.

* Based on +1 and -1 standard deviation from the mean.

** Applies only to wheeled vehicles without traction devices.

† Estimated from textural, plasticity, and organic properties of soil under given moisture condition.

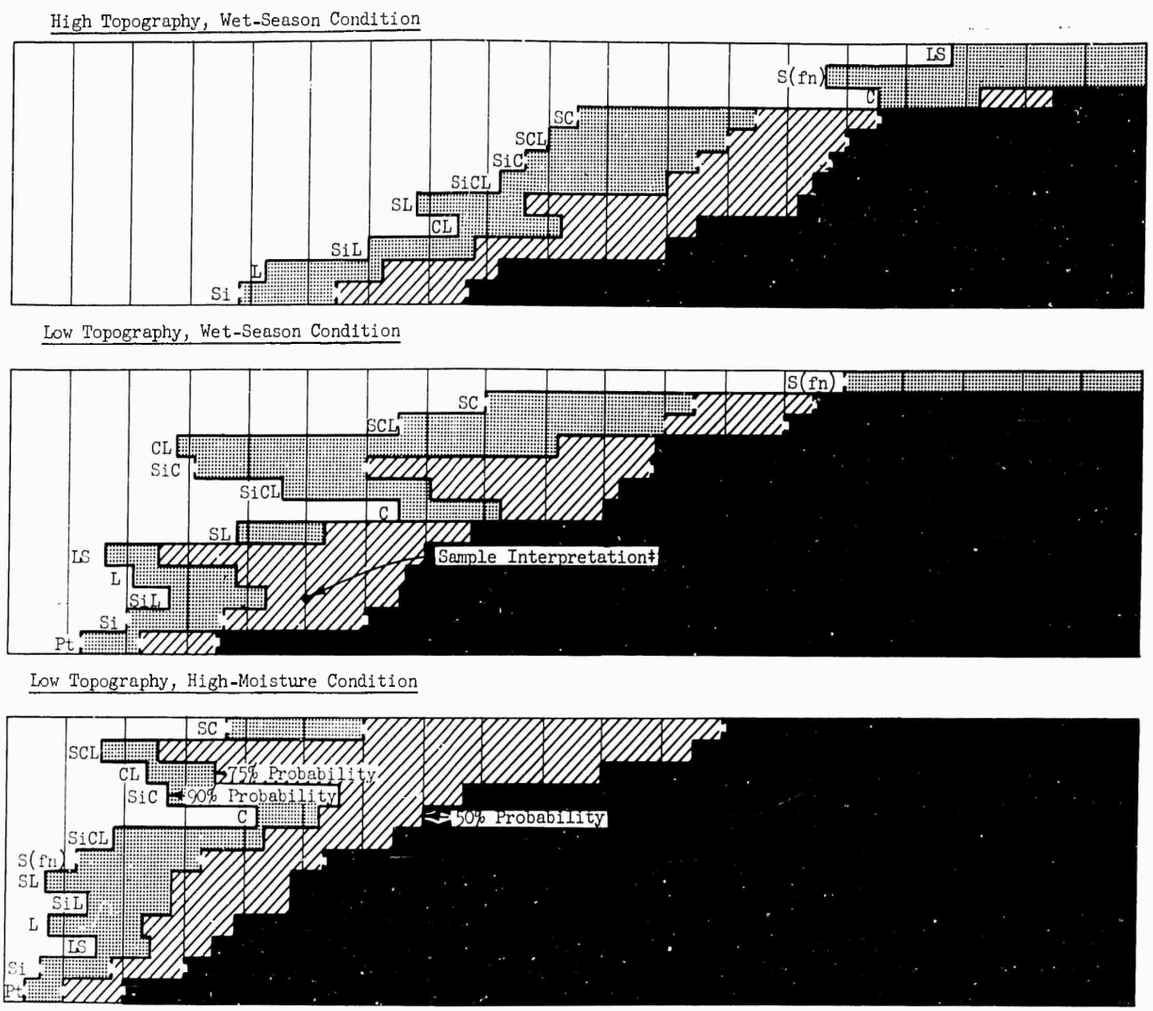
†† Based on analysis of less than five samples.

‡ A vehicle with a vehicle cone index of 60 would have a 50-75% chance of "go" on an ML soil of low topography, wet-season condition.

Table 12

Soil Trafficability Classification in USDA Terms

ements RCI	Mean RCI	Effects of Slipper-iness**	Stick-iness
201-300	254	None	None
190-300	251	None	None
159-219	189	Slight	Moderate
---	161†	Slight	Slight
110-202	156	Slight	Slight
23-187††	105††	Slight	Moderate
108-188	148	Slight	Slight
81-215	148	None	None
86-172	129	Slight	Slight
76-172	124	Slight	Slight
63-147	105	Slight	Slight
108††	108††	Slight	None
278-300††	291††	None	None
---	150†	Moderate	Moderate
92-180	136	Moderate	Moderate
69-175	122	Moderate	Moderate
66-184	125	Severe	Severe
62-180	121	Moderate	Moderate
68-176	122	Severe	Severe
46-168	107	Slight	Slight
20-188	104	Slight	None
37-143	90	Moderate	Moderate
41-125	83	Moderate	Moderate
27-101††	64††	Moderate	Slight
41-51††	46††	Moderate	Slight
---	115†	Severe	Severe
44-172	108	Severe	Moderate
51-159	105	Severe	Moderate
44-152	98	Severe	Severe
50-126	88	Severe	Severe
44-120	82	Severe	Moderate
---	74†	Slight	None
24-110	67	Moderate	Slight
36-100	68	Severe	Moderate
28-86	57	Severe	Moderate
12-110	61	Slight	Slight
30-52††	41††	Severe	Slight
41-51††	46††	Severe	Slight



TY OF VEHICLE "GO" ON LEVEL TERRAIN

Good reliability, based on analysis of data

Fair reliability, based on judgement

2

index range are given in paragraph 97.

d deviation from the mean.

hicles without traction devices.

lasticity, and organic properties of soil under given moisture condition.

than five samples.

one index of 60 would have a 50-75% chance of "go" on an ML soil of low topography, wet-season condition.

Table 13

Per Cent Probability of Tracked and Wheeled Vehicles "Go" on Level and

Soil Type Symbol	No. of Samples	Vehicle Category 1								Vehicle Category 2								Vehicle Category 3								Vehicle Category 4							
		VCI Range* 20-29								VCI Range 30-40								VCI Range 50-59								VCI Range 60-69							
		Tracked				Wheeled				Tracked				Wheeled				Tracked				Wheeled				Tracked				Wheeled			
		% Slope				% Slope				% Slope				% Slope				% Slope				% Slope				% Slope				% Slope			
		0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	

High Topography, Wet-Season Condition

GW, GP SW, SP	0																																
SP-SM	10	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	10
GM†	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	10
SM	51	100	100	100	100	100	100	100	99	100	100	100	99	100	100	100	96	100	100	98	96	100	99	97	94	99	98	96	95	99	97	9	
CH	9	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	10
GC†	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	98	100	100	100	97	100	100	100	92	100	100	98	93	100	100	9	
SC	9	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	89	100	100	100	89	100	100	95	89	100	98	89	89	100	96	8	
MH†	3	100	100	99	98	100	99	96	99	97	97	96	93	97	97	97	89	97	97	95	87	97	96	92	79	96	94	89	81	96	93	8	
CL	135	99	99	99	97	99	99	98	95	99	98	97	95	99	97	97	86	97	97	94	85	97	96	91	77	95	93	87	79	95	92	8	
SM-SC	6	100	100	100	100	100	100	100	92	100	100	100	83	100	100	100	83	100	96	83	80	100	93	83	67	92	83	83	67	92	83	7	
ML	79	100	100	97	94	100	89	86	86	97	96	94	87	97	95	92	79	94	91	85	73	94	89	79	62	88	82	75	64	88	80	7	
CL-ML	25	100	100	100	87	100	100	96	68	100	95	81	68	100	93	88	68	81	68	68	61	81	68	68	40	68	68	68	40	68	68	5	

Low Topography, Wet-Season Condition

GW, GP SW, SP	0																																
SP-SM†	1	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	10
CH	41	100	100	100	100	100	100	100	100	97	100	100	100	97	100	100	100	88	100	99	97	97	100	98	92	82	97	94	88	84	97	93	8
GC†	0	100	100	100	98	100	100	100	93	100	100	97	92	100	99	95	86	97	94	91	84	97	93	89	75	93	90	86	78	93	89	8	
SC†	3	100	100	100	96	100	100	98	91	100	97	95	90	100	97	93	82	95	92	86	81	95	91	85	69	91	87	82	73	91	86	7	
SM-SC†	4	100	100	98	94	100	100	96	87	98	96	92	86	98	96	90	75	92	89	84	76	92	87	81	64	87	83	76	67	87	82	7	
MH	11	91	91	91	89	91	91	91	82	91	91	87	82	91	91	87	73	87	82	82	69	87	82	77	54	82	80	73	54	82	79	6	
GM†	0	99	96	91	85	99	94	88	77	91	87	83	75	91	86	79	64	83	79	73	62	83	77	68	52	77	71	64	54	77	69	5	
SM	25	96	90	84	78	96	95	92	85	94	92	87	82	94	91	87	78	92	89	84	77	92	87	82	67	87	85	77	62	87	83	7	
CL	196	97	95	91	82	97	94	88	70	91	86	80	68	91	85	78	63	90	83	76	63	90	83	76	60	83	79	71	59	83	78	6	
ML	104	95	89	81	71	95	88	77	61	91	85	76	61	91	84	75	61	89	83	74	61	89	83	74	61	89	83	74	61	89	83	7	
CL-ML	36	98	92	78	55	98	93	84	55	97	93	81	55	97	93	81	55	97	93	81	55	97	93	81	55	97	93	81	55	97	93	8	
OL	7	100	97	86	54	100	94	70	43	97	91	77	43	97	91	77	43	97	91	77	43	97	91	77	43	97	91	77	43	97	91	7	
OH	10	95	86	70	43	95	82	60	24	90	77	58	24	90	77	58	24	90	85	80	20	90	85	80	20	90	85	80	20	90	85	8	
Pt†	2	96	78	62	28	96	72	50	4	92	67	50	17	92	54	33	4	92	54	33	4	92	54	33	4	92	54	33	4	92	54	3	

Low Topography, High-Moisture Condition

GW, GP SW, SP	0																																
CH	28	100	99	93	85	100	97	91	75	97	94	84	72	97	94	82	61	94	90	68	59	94	76	64	45	75	66	61	48	75	65	5	
GC†	0	99	95	90	83	99	94	88	72	94	89	81	70	94	89	81	77	89	84	67	56	89	81	73	63	42	72	66	58	46	72	63	5
SC†	0	97	93	84	62	97	92	86	70	94	89	80	70	94	89	80	70	89	84	73	56	89	80	73	63	54	80	71	61	45	70	64	5
SM-SC†	2	95	91	87	80	95	90	85	68	93	88	78	68	93	88	78	68	93	88	73	54	88	78	68	54	78	69	59	37	68	62	5	
MH	9	92	89	82	65	88	85	81	61	93	88	78	61	93	88	78	61	93	88	67	56	88	78	68	54	78	62	56	44	61	56	5	
CL	159	93	89	79	67	93	86	73	52	93	91	83	50	93	91	83	50	93	87	77	50	93	87	77	50	93	87	77	50	93	87	7	
SP-SM†	0	89	81	73	61	89	79	68	47	93	88	77	45	93	88	73	64	50	37	57	49	43	36	57	47	39	29	46	41	37	31	46	40
GM†	0	85	77	69	55	85	75	64	41	92	82	71	51	92	82	71	51	45	31	51	44	37	29	51	41	34	22	41	36	31	24	41	35
SM	21	81	75	67	49	81	73	60	33	87	77	65	31	87	77	65	31	67	54	38	29	46	36	29	28	45	35	29	22	33	29	29	23
ML	63	87	77	62	50	87	73	57	34	92	88	77	57	92	88	77	57	62	53	41	30	47	40	35	28	47	39	33	14	39	34	30	15
CL-ML	27	84	75	55	36	84	71	46	24	93	88	78	43	93	88	78	43	34	22	55	39	30	4	34	28	18	3	34	25	11	0	24	16
OL†	1	80	69	48	24	80	62	40	3	98	96	93	48	98	96	93	48	98	96	93	48	98	96	93	48	98	96	93	48	98	96	9	
OH	7	72	54	42	12	72	51	29	0	92	88	83	42	92	88	83	42	92	88	83	42	92	88	83	42	92	88	83	42	92	88	8	
Pt†	2	60	45	27	2	60	41	14	0	97	90	83	42	97	90	83	42	97	90	83	42	97	90	83	42	97	90	83	42	97	90	8	

* Probability of "go" based on median vehicle cone index within vehicle categories 1-6 and minimum vehicle cone index for category 7.

** Probability of "go" for vehicles in category 7 equal to or less than the given value.

† Soils with estimated probabilities.

†† Sample interpretation: A tracked vehicle with a vehicle cone index in the range 60-69 has a 62% probability of "go" on a CL soil at 15% slope under low topography,

Table 13

f Tracked and Wheeled Vehicles "Go" on Level and Sloping Terrain in USCS Terms

ory 3			Vehicle Category 4								Vehicle Category 5								Vehicle Category 6								Vehicle Category 7**							
-59			VCI Range 60-69								VCI Range 70-79								VCI Range 80-89								VCI Range 100 or Greater							
Wheeled			Tracked				Wheeled				Tracked				Wheeled				Tracked				Wheeled				Tracked				Wheeled			
% Slope			% Slope				% Slope				% Slope				% Slope				% Slope				% Slope				% Slope				% Slope			
15	30	45	0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	45

High Topography, Wet-Season Condition

100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
100	100	99	100	100	100	99	100	100	100	97	100	100	99	97	100	100	99	94	99	96	94	89	98	96	94	91	98	96	93	88				
99	97	94	99	98	96	93	97	96	91	87	96	94	92	87	95	93	91	85	93	90	87	79	92	91	86	80	92	90	83	75				
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
100	100	92	100	100	98	93	100	100	96	86	100	97	94	84	100	96	92	80	100	94	91	83	89	85	80	74	89	84	77	67				
100	95	89	100	96	92	87	100	94	89	80	95	89	84	75	94	88	83	72	92	87	84	76	89	89	77	67	89	89	67	56				
96	92	79	96	94	89	81	96	93	89	73	92	87	82	73	92	86	81	68	88	82	77	63	82	77	68	52	76	71	65	55	76	69	61	41
96	91	77	95	93	87	79	95	92	88	70	91	85	80	73	91	84	77	63	86	80	75	62	80	75	66	50	75	68	63	52	75	67	59	38
93	83	67	92	83	78	67	92	83	75	67	83	80	67	67	83	77	67	53	77	67	67	53	77	67	67	33	67	67	58	33	67	67	50	33
89	79	62	88	82	75	64	88	82	70	57	79	73	66	54	79	71	62	51	81	71	62	51	71	62	56	40	59	57	53	42	59	56	50	37
68	68	40	68	68	64	40	68	68	54	36	68	61	40	32	68	54	40	32	68	54	40	32	54	40	32	16	40	34	26	17	40	33	20	16

Low Topography, Wet-Season Condition

100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
98	92	82	97	94	88	74	97	93	86	74	92	87	78	62	87	82	71	46	78	73	61	48	78	72	51	34								
93	89	75	93	90	86	67	93	89	82	63	87	82	71	50	82	77	67	43	72	71	60	39	70	63	55	42	70	61	50	32				
91	86	69	91	87	82	63	91	86	78	63	86	81	73	58	81	77	67	43	77	67	60	39	64	58	50	38	64	56	44	29				
87	81	64	87	83	77	57	87	82	73	57	81	77	67	53	77	73	63	39	73	63	56	36	60	53	44	35	60	51	40	26				
82	77	54	82	80	72	54	82	78	68	54	77	73	63	50	73	68	58	36	68	58	50	34	54	48	32	18	54	46	18	18				
77	67	42	77	71	64	44	77	67	54	46	67	62	54	42	67	62	54	32	62	54	44	27	44	40	41	38	49	44	40	35				
67	54	46	67	58	52	40	67	54	46	41	54	50	44	36	54	50	44	32	54	44	36	32	44	39	36	33	44	37	36	32				
71	52	43	70	62††	54	43	70	60	50	37	60	54	46	34	60	54	46	34	60	54	46	34	41	34	20	40	36	31	22	40	35	27	19	
62	42	34	61	55	47	35	61	53	41	34	53	47	41	28	47	43	34	21	43	34	28	14	32	26	21	15	32	25	19	12				
40	24	15	39	31	22	16	39	24	17	14	24	21	14	9	21	19	14	9	19	14	11	6	14	13	10	7	14	12	9	3				
43	30	19	43	40	28	14	43	27	20	9	27	25	19	11	25	23	19	9	23	19	14	6	14	14	6	0	14	5	0	0	14	2	0	0
20	20	10	20	20	20	10	20	20	15	10	20	15	10	10	20	15	10	10	15	15	10	10	10	10	10	10	10	10	10	10				
5	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

Low Topography, High-Moisture Condition

76	64	45	75	66	61	45	75	65	50	34	64	57	38	23	57	51	34	17	40	32	19	34	34	27	19	33	33	21	14					
73	63	42	72	64	58	42	72	62	45	34	63	56	40	23	56	51	34	17	38	32	17	37	32	24	18	37	29	20	14					
71	61	40	70	64	56	38	70	61	42	30	61	54	34	21	54	49	32	15	34	30	16	35	28	21	16	35	26	19	12					
65	54	37	65	62	54	40	65	59	40	26	59	52	44	29	52	49	37	19	44	37	22	14	32	24	19	15	32	23	18	11				
62	52	44	61	59	54	41	61	59	50	34	59	54	44	32	54	51	41	23	49	44	33	11	44	37	22	11	44	34	11	11				
54	46	24	52	44	38	27	52	42	32	15	40	35	28	17	41	36	25	13	34	28	16	8	19	17	14	10	19	17	12	8				
47	34	29	46	41	37	31	46	40	34	25	34	32	28	21	32	30	27	17	28	27	24	21	27	25	23	21	27	24	22	19				
41	34	22	41	36	31	24	41	35	27	19	34	29	25	20	34	29	25	17	29	25	20	15	20	19	17	15	20	18	16	13				
35	29	22	33	29	25	23	33	29	25	17	29	26	24	19	29	27	22	14	27	22	19	14	24	20	14	14	19	16	14	14	19	15	14	14
39	33	14	37	34	30	19	37	33	20	10	33	28	16	12	28	25	14	7	25	16	7	2	13	8	5	2	13	7	3	2				
25	11	0	24	16	4	0	24	13	2	0	11	3	0	0	11	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0				
5	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

k for category 7.

" on a CL soil at 15% slope under low topography, wet-season condition.

Table 13

Table

Per Cent Probability of Tracked and Wheeled Vehicles

Soil Type Symbol	No. of Samples	Vehicle Category 1								Vehicle Category 2								Vehicle Category 3								Veh			
		VCI Range* 20-29								VCI Range 30-49								VCI Range 50-59								VC			
		Tracked				Wheeled				Tracked				Wheeled				Tracked				Wheeled				Tracked			
		% Slope				% Slope				% Slope				% Slope				% Slope				% Slope				% Slope			
		0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	
High Topography, Wet																													
LS	18	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
S(fn)	16	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
C	5	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
SC†	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	99	100	100	100	94	100	100	100	
SCL†	10	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	98	100	100	100	92	100	100	100	
SiC†	2	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	98	100	100	100	90	100	100	100	
SiCL	12	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	98	100	100	100	88	100	100	100	
SL	48	100	99	98	98	100	99	98	95	98	98	98	95	98	98	98	87	98	97	91	85	98	96	89	75	95	91	87	
CL	5	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	95	100	100	100	80	100	100	100	
SiL	130	100	100	100	97	100	100	99	92	100	98	96	91	100	98	94	82	96	93	90	80	96	92	86	71	92	88	82	
L	37	99	97	94	91	99	96	94	80	94	94	88	79	94	94	81	65	88	80	78	61	88	80	71	49	80	75	65	
Si†	1	98	96	93	88	98	95	92	77	93	91	86	74	93	90	82	57	86	80	71	55	86	77	63	44	77	68	57	
Low Topography, Wet																													
St	2	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
SC†	0	100	100	100	100	100	100	100	98	100	100	100	97	100	100	99	93	100	99	97	93	100	98	95	88	98	96	93	
SCL†	6	100	100	100	99	100	100	100	94	100	100	98	93	100	100	95	89	98	94	92	88	98	94	90	84	94	91	89	
CL	17	100	97	88	82	100	96	85	79	88	84	82	78	88	83	82	77	82	81	77	77	82	80	77	77	79	77	77	
SiC†	11	100	97	91	84	100	96	88	78	91	87	82	77	91	85	79	71	82	79	75	70	82	78	73	64	78	74	71	
SiCL	37	99	97	95	93	99	96	95	82	95	95	90	81	95	95	87	75	90	85	78	75	90	84	77	65	82	78	75	
C	16	100	100	100	98	100	100	100	94	100	100	97	94	100	100	94	87	97	94	94	86	97	94	90	72	94	92	87	
SL	38	99	96	92	87	99	95	91	73	92	91	84	70	92	90	79	58	84	76	66	56	84	74	62	45	73	64	58	
LS	6	92	80	69	63	92	78	69	60	69	69	69	56	69	69	69	50	69	65	50	50	69	62	50	42	60	50	50	
L	58	93	90	83	73	93	88	78	64	83	77	71	62	83	75	63	46	71	67	60	45	71	65	53	39	64	58	46	
SiL	171	97	95	87	76	97	93	82	63	87	80	73	60	87	79	68	45	73	66	57	43	73	64	51	34	63	55††	45	
Si†	3	94	88	79	70	94	86	76	55	79	74	67	53	79	73	61	39	67	59	50	38	67	56	46	28	55	48	39	
Pt†	2	86	75	62	28	86	72	50	4	62	45	18	3	62	34	10	0	18	8	0	0	18	5	0	0	4	0	0	
Low Topography, High																													
SC†	0	100	100	99	88	100	100	94	78	99	92	86	77	99	91	81	70	86	80	75	69	86	79	72	64	78	74	70	
SCL	6	92	80	67	67	92	77	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	58	67	67	67	
CL	18	100	95	78	73	100	91	75	70	78	74	73	69	78	73	73	61	73	72	67	61	73	70	64	58	70	66	61	
SiC	15	100	97	87	87	100	94	87	77	87	87	87	84	87	87	87	60	87	84	67	58	87	80	63	37	77	66	60	
C	12	100	99	92	90	100	97	92	72	92	92	87	66	92	92	83	50	87	79	58	49	87	75	54	38	72	57	50	
SiCL	28	95	88	82	78	95	87	82	55	82	82	71	53	82	82	61	50	71	59	50	49	71	57	50	39	55	50	50	
St	0	88	83	77	65	88	81	73	49	77	71	61	48	77	68	54	37	61	52	46	36	61	50	41	27	49	44	37	
SL	22	84	81	74	62	84	79	70	44	74	68	57	42	74	66	48	39	57	46	39	36	57	45	39	18	44	39	33	
SiL	131	90	84	73	59	90	81	67	42	73	65	55	40	73	62	50	25	55	47	35	23	55	44	30	14	42	33	25	
L	43	83	78	68	48	83	75	59	41	68	55	47	40	68	52	44	21	47	43	37	19	47	42	29	9	41	35	21	
LS	6	91	80	67	33	91	77	50	25	67	45	33	22	67	37	33	17	33	30	17	17	33	27	17	17	25	17	17	
Si†	2	79	69	50	37	79	65	43	30	50	41	34	25	50	39	30	17	34	29	23	15	34	28	20	9	30	22	17	
Pt†	2	60	45	27	2	60	41	14	0	27	10	0	0	27	6	0	0	0	0	0	0	0	0	0	0	0	0	0	

* Probability of "go" based on median vehicle cone index within vehicle categories 1-6 and minimum vehicle cone index for category 7.

** Probability of "go" for vehicles in category 7 equal to or less than the given value.

† Soils with estimated probabilities.

†† Sample interpretation: A tracked vehicle with a vehicle cone index in the range 60-69 has a 55% probability of "go" on an SiL soil at 15% slope

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Table 14

Cent Probability of Tracked and Wheeled Vehicles "Go" on Level and Sloping Terrain in USDA Terms

Vehicle Category 3							Vehicle Category 4								Vehicle Category 5								Vehicle Category 6								Vehicle C			
VCI Range 50-59							VCI Range 60-69								VCI Range 70-79								VCI Range 80-99								VCI Range 1			
Tracked				Wheeled			Tracked				Wheeled				Tracked				Wheeled				Tracked				Wheeled				Tracked			
% Slope				% Slope			% Slope				% Slope				% Slope				% Slope				% Slope				% Slope				% Slope			
15	30	45		0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	45

High Topography, Wet-Season Condition

100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	94	100	100	100	95
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
100	100	99	100	100	100	94	100	100	100	96	100	100	98	90	100	99	96	91	100	99	94	66	96	94	90	85	96	93	88	79	92	89	86	80
100	100	98	100	100	100	92	100	100	100	94	100	100	97	88	100	98	95	89	100	98	92	84	95	92	88	83	95	91	86	75	90	87	84	77
100	100	98	100	100	100	90	100	100	100	92	100	100	96	86	100	98	94	87	100	97	90	81	94	90	86	80	94	89	84	71	88	85	81	74
100	100	98	100	100	100	88	100	100	100	90	100	100	96	83	100	98	92	83	100	97	88	79	92	86	83	77	92	85	83	67	83	83	79	69
97	91	85	98	96	89	75	95	91	87	77	95	90	83	70	89	85	79	71	89	86	75	64	79	74	70	62	79	73	68	57	72	69	64	58
100	100	95	100	100	100	80	100	100	100	80	100	100	90	70	100	95	80	75	100	91	80	60	80	80	70	60	80	80	60	40	80	65	60	45
93	90	80	96	92	86	71	92	88	82	73	92	87	78	63	86	80	74	66	86	79	71	55	74	70	63	53	74	69	59	39	68	61	55	41
80	78	61	88	80	71	49	80	75	65	50	80	73	58	45	71	61	51	45	71	60	49	38	51	48	45	35	51	47	43	24	46	44	38	27
80	71	55	86	77	63	44	77	68	57	45	77	65	51	37	63	55	47	39	63	52	44	31	47	42	37	29	47	40	34	21	40	36	31	23

Low Topography, Wet-Season Condition

100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	98	100	100	100	100
99	97	93	100	98	95	88	98	96	93	89	98	95	91	84	95	93	90	85	95	92	88	79	90	87	84	79	90	86	81	71	86	83	79	73
94	92	88	98	94	90	84	94	91	89	85	94	90	87	81	90	88	86	83	90	88	84	77	86	84	81	76	86	83	79	66	83	80	77	70
81	77	77	82	80	77	77	79	77	77	77	79	77	77	74	77	77	77	75	77	77	77	60	77	77	74	54	77	77	71	35	77	72	60	38
79	75	70	82	78	73	64	78	74	71	66	78	73	69	59	73	70	66	60	73	69	64	50	66	63	59	48	66	62	55	26	61	57	50	30
85	78	75	90	84	77	65	82	78	75	68	82	77	73	57	77	75	70	58	77	73	65	47	70	63	57	44	70	61	54	32	59	55	47	34
94	94	86	97	94	90	72	94	92	87	76	94	91	84	56	90	86	81	60	90	85	72	40	81	68	56	36	81	65	50	31	63	53	40	31
76	66	56	84	74	62	45	73	64	58	47	73	63	53	37	62	56	48	40	62	55	45	29	48	44	37	28	48	43	32	24	42	35	29	24
65	50	50	69	62	50	42	60	50	50	46	60	50	50	33	50	50	50	33	50	50	42	33	50	38	33	33	50	35	33	33	33	33	33	33
67	60	45	71	65	53	39	64	58	46	40	64	58	44	35	53	45	41	37	53	44	39	32	41	39	35	32	41	38	33	22	38	34	32	25
66	57	43	73	64	51	34	63	55††	45	35	63	53	40	28	51	43	36	30	51	41	34	20	36	33	28	19	36	32	24	12	31	28	20	14
59	50	38	67	56	46	28	55	46	32	30	55	46	35	21	46	38	31	23	46	36	28	15	31	26	21	14	31	25	18	10	25	20	15	11
8	0	0	18	5	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Low Topography, High-Moisture Condition

80	75	69	86	79	72	64	78	74	70	65	78	73	68	60	72	69	66	61	72	68	64	56	66	63	60	55	66	62	58	50	62	59	56	51
67	67	67	67	67	67	59	67	67	67	64	67	67	67	50	67	67	67	50	67	67	58	50	67	55	50	50	67	52	50	50	50	50	50	50
72	67	61	73	70	64	58	70	66	61	60	70	65	61	53	64	62	61	55	64	61	56	48	61	57	53	46	61	56	50	33	56	52	48	33
84	67	58	87	80	63	37	77	66	60	43	77	64	53	27	63	58	46	27	63	55	37	20	46	33	27	18	46	29	27	13	27	27	20	13
79	58	43	87	75	54	38	72	57	50	40	72	55	46	30	54	49	42	32	54	47	38	21	42	37	30	19	42	35	25	17	33	28	21	17
59	50	43	71	57	50	39	55	50	50	42	55	50	46	32	50	49	43	34	50	47	39	21	43	38	32	19	43	36	28	7	35	30	21	9
52	46	36	61	50	41	27	43	44	37	28	43	42	34	22	41	36	30	23	41	34	27	18	30	26	22	18	30	25	20	14	24	21	18	15
46	39	36	57	45	39	19	44	39	39	24	44	39	32	6	39	36	26	8	39	34	18	4	26	15	6	4	26	12	4	4	8	6	4	4
47	35	23	55	44	30	14	42	33	25	16	42	31	21	9	30	23	16	11	30	21	14	5	16	14	9	5	16	13	6	2	12	8	5	3
43	37	19	47	42	29	9	41	35	21	11	41	32	16	7	29	19	12	7	29	17	9	6	12	9	7	6	12	8	7	0	7	7	6	1
30	17	17	33	27	17	17	25	17	17	17	25	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
29	23	15	34	28	20	9	30	22	17	10	30	20	14	4	20	15	11	6	20	14	9	1	11	8	4	0	11	7	3	0	7	4	1	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

vehicle cone index for category 7.

probability of "go" on an SiL soil at 15% slope under low topography, wet-season condition.

Table 14

led Vehicles "Go" on Level and Sloping Terrain in USDA Terms

Vehicle Category 4								Vehicle Category 5								Vehicle Category 6								Vehicle Category 7**							
VCI Range 60-69								VCI Range 70-79								VCI Range 80-99								VCI Range 100 or Greater							
Tracked				Wheeled				Tracked				Wheeled				Tracked				Wheeled				Tracked				Wheeled			
% Slope				% Slope				% Slope				% Slope				% Slope				% Slope				% Slope				% Slope			
0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	45

ography, Wet-Season Condition

00	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
00	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	94	100	100	100	95	100	100	100	94
00	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
00	100	100	96	100	100	98	90	100	99	96	91	100	99	94	86	96	94	90	85	96	93	88	79	92	89	86	80	92	89	84	71
00	100	100	94	100	100	97	88	100	98	95	89	100	98	92	84	95	92	88	83	95	91	86	75	90	87	84	77	90	86	81	65
00	100	100	92	100	100	96	86	100	98	94	87	100	97	90	81	94	90	86	80	94	89	84	71	88	85	81	74	88	84	78	61
00	100	100	90	100	100	96	83	100	98	92	83	100	97	88	79	92	86	83	77	92	85	83	67	83	83	79	69	83	83	75	58
95	91	87	77	95	90	83	70	89	85	79	71	89	86	75	64	79	74	70	62	79	73	68	57	72	69	64	58	72	69	60	51
00	100	100	80	100	100	90	70	100	95	80	75	100	91	80	60	80	80	70	60	80	80	60	40	80	65	60	45	80	62	60	20
92	88	82	73	92	87	78	63	86	80	74	66	86	79	71	55	74	70	63	53	74	69	59	39	68	61	55	41	68	60	50	31
80	75	65	50	80	73	58	45	71	61	51	45	71	60	49	38	51	48	45	35	51	47	43	24	46	44	38	27	46	44	32	24
77	68	57	45	77	65	51	37	63	55	47	39	63	52	44	31	47	42	37	29	47	40	34	21	40	36	31	23	40	35	27	15

graphy, Wet-Season Condition

00	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	98	100	100	100	100	100	100	100	94
98	96	93	89	98	95	91	84	95	93	90	85	95	92	88	79	90	87	84	79	90	86	81	71	86	83	79	73	86	82	77	59
94	91	89	85	94	90	87	81	90	88	86	83	90	88	84	77	86	84	81	76	86	83	79	66	83	80	77	70	83	79	75	50
79	77	77	77	79	77	77	74	77	77	77	75	77	77	77	60	77	77	74	54	77	77	71	35	77	72	60	38	77	71	47	35
78	74	71	66	78	73	69	59	73	70	66	60	73	69	64	50	66	63	59	48	66	62	55	26	61	57	50	30	61	56	43	21
82	78	75	68	82	77	73	57	77	75	70	58	77	73	65	47	70	63	57	44	70	61	54	32	59	55	47	34	59	54	40	30
94	92	87	76	94	91	84	56	90	86	81	60	90	85	72	40	81	68	56	36	81	65	50	31	63	53	40	31	63	51	31	25
73	64	58	47	73	63	53	37	62	56	48	40	62	55	45	29	48	44	37	28	48	43	32	24	42	35	29	24	42	33	26	24
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64	58	46	40	64	58	44	35	53	45	41	37	53	44	39	32	41	33	35	32	41	38	33	22	38	34	32	25	38	33	31	21
53	55††	45	35	63	53	40	28	51	43	36	30	51	41	34	30	36	33	28	19	36	32	24	12	31	28	20	14	31	26	17	10
55	48	39	30	55	46	35	21	46	38	31	23	46	36	28	15	31	26	21	14	31	25	18	10	26	20	15	11	25	19	13	7
4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

raphy, High-Moisture Condition

78	74	70	65	78	73	66	60	72	67	66	61	72	66	64	56	66	63	60	55	66	62	58	50	62	57	56	51	62	58	54	45
67	67	67	64	67	67	67	50	67	67	67	50	67	67	58	50	67	55	50	50	67	52	50	50	50	50	50	50	50	50	50	50
70	66	61	60	70	65	61	53	64	61	61	55	64	61	56	48	61	57	53	46	61	56	50	33	56	52	48	33	56	50	44	33
77	65	60	43	77	64	53	27	63	56	46	27	63	55	37	20	46	33	27	18	46	27	27	13	27	27	20	13	27	27	13	13
72	57	50	40	72	55	46	30	54	49	42	32	54	47	38	21	42	37	30	19	42	35	25	17	33	28	21	17	33	26	17	17
55	50	50	42	55	50	46	32	50	49	43	34	50	47	39	21	43	38	32	19	43	36	28	7	35	30	21	9	35	29	14	7
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44	39	39	24	44	39	32	6	39	36	26	8	39	34	18	4	26	15	6	4	26	12	4	4	8	6	4	4	8	5	4	4
42	33	25	16	42	31	21	9	30	23	16	11	30	21	14	5	16	14	9	5	16	13	6	2	12	8	5	3	12	7	4	2
41	35	21	11	41	32	16	7	29	19	12	7	29	17	9	6	12	9	7	6	12	8	7	0	7	7	6	1	7	7	5	0
25	17	17	17	25	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
30	22	17	10	30	20	14	4	20	15	11	6	20	14	9	1	11	8	4	0	11	7	3	0	7	4	1	0	7	3	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

15% slope under low topography, wet-season conditlon.

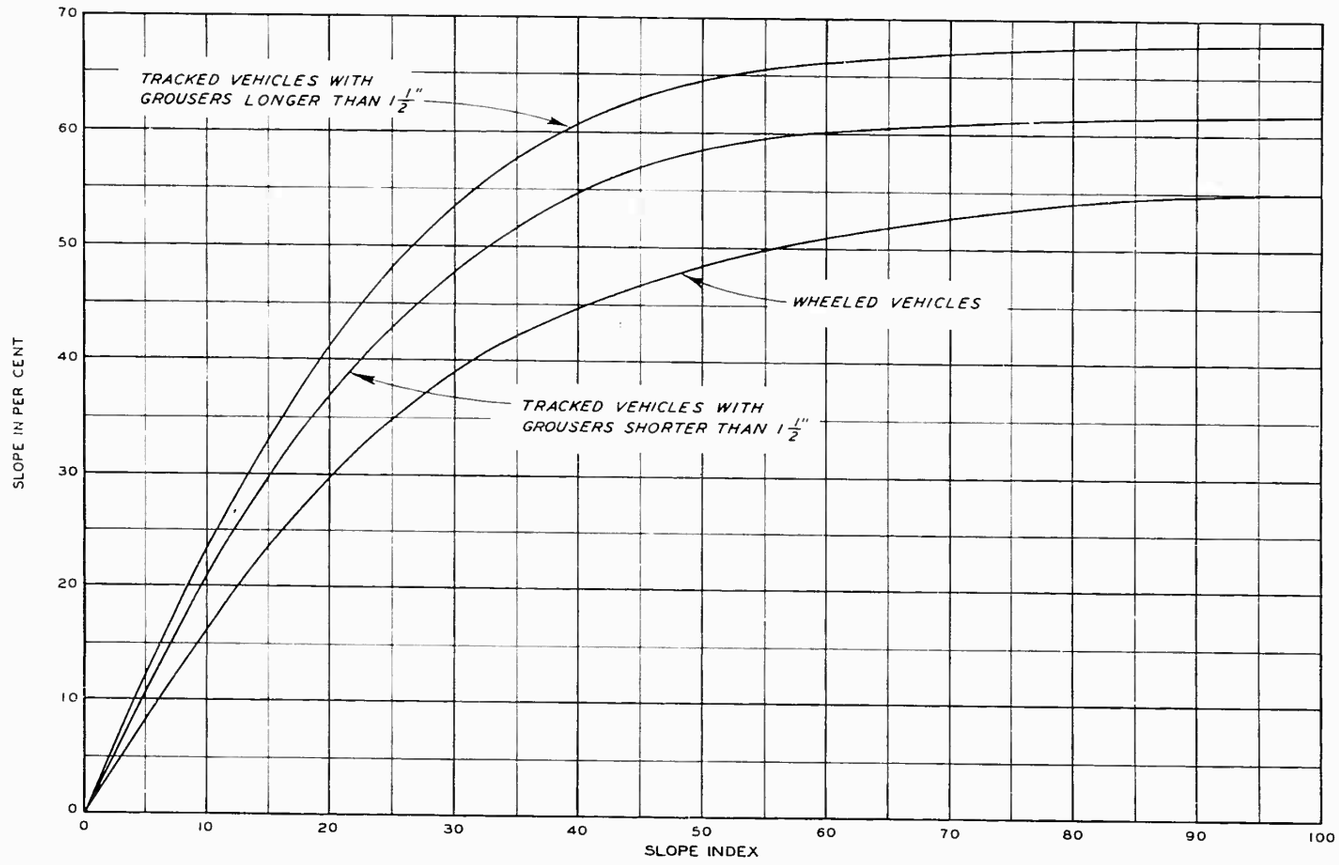
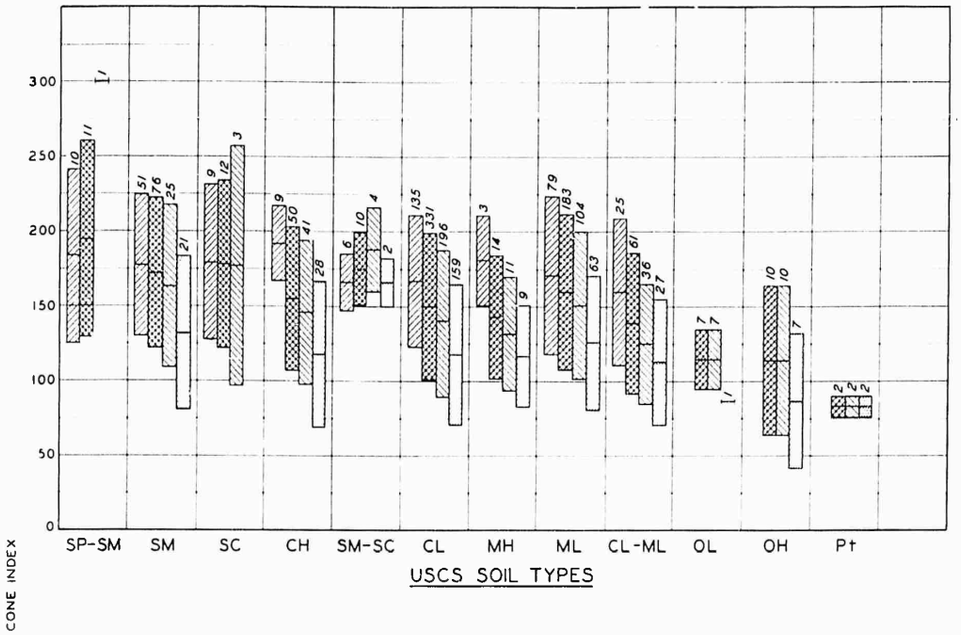
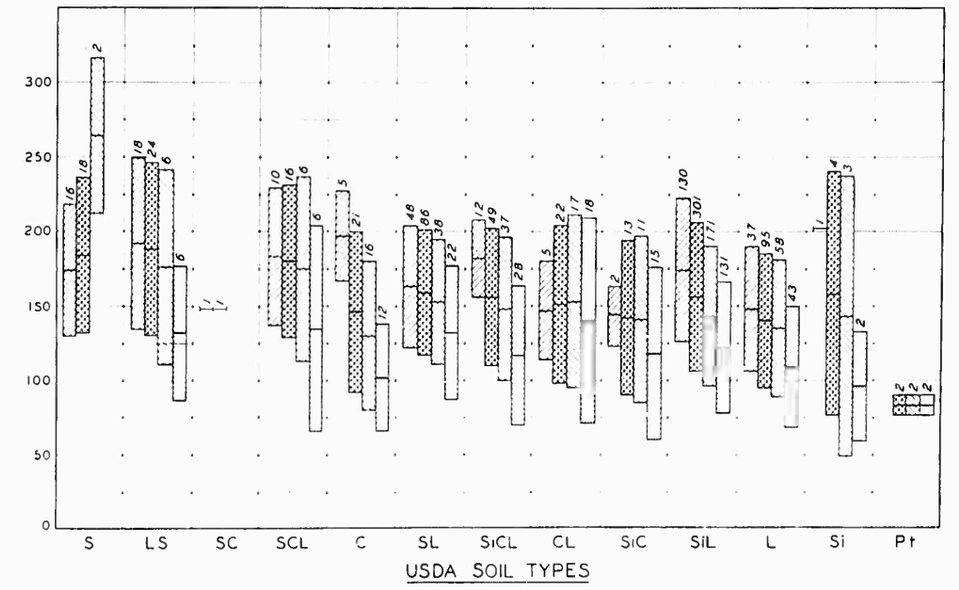


CHART FOR DETERMINING SLOPE INDEX

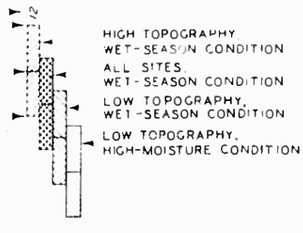
PLATE I





LEGEND

NUMBER OF SAMPLES USED IN ANALYSIS
PLUS ONE STANDARD DEVIATION FROM MEAN
MEAN
MINUS ONE STANDARD DEVIATION FROM MEAN



HIGH TOPOGRAPHY, WET-SEASON CONDITION
ALL SITES, WET-SEASON CONDITION
LOW TOPOGRAPHY, WET-SEASON CONDITION
LOW TOPOGRAPHY, HIGH-MOISTURE CONDITION

CONE INDEX

MEAN AND RANGE OF ± ONE STANDARD DEVIATION FOR VARIOUS MOISTURE CONDITIONS

PLATE 2

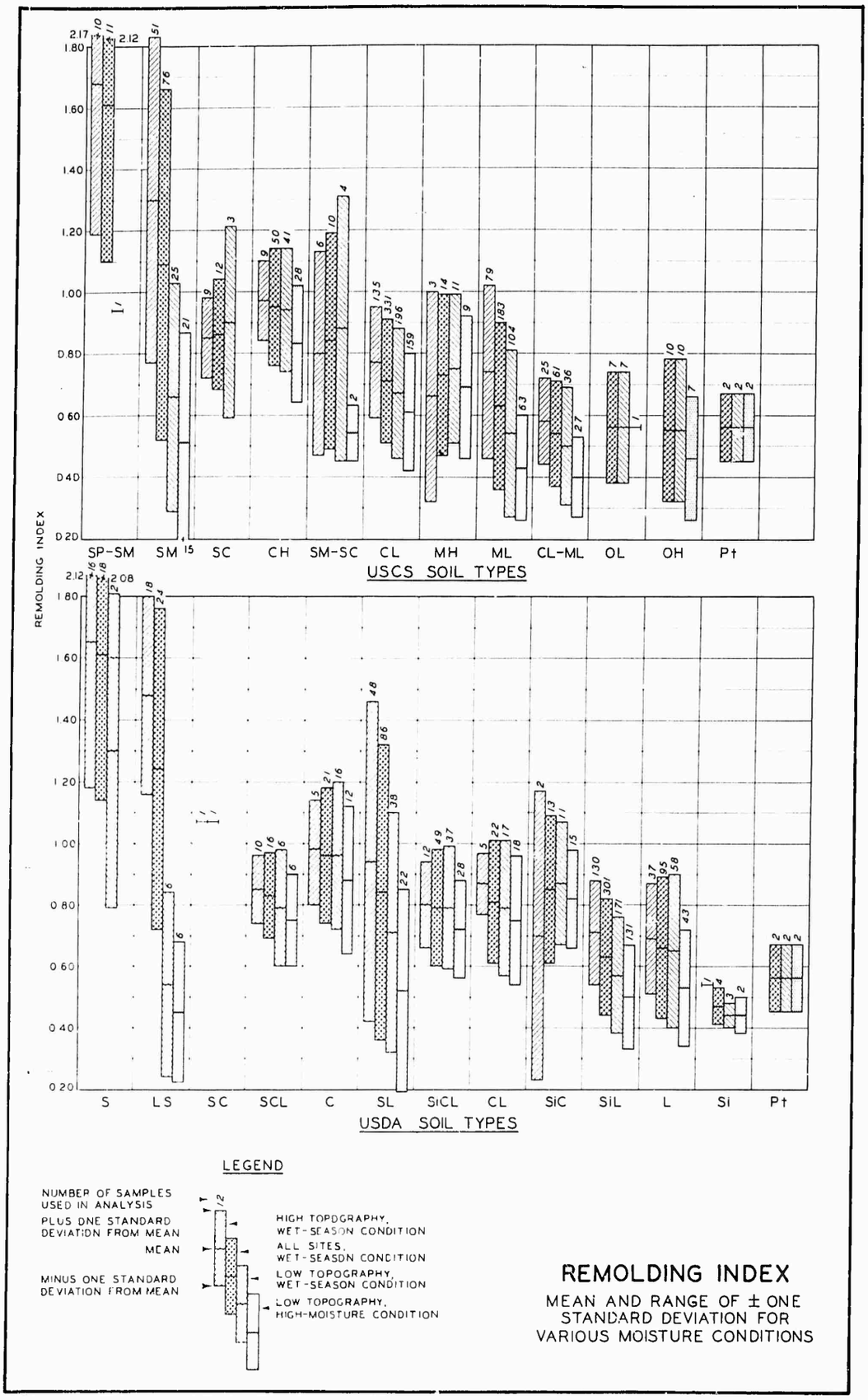

REMOLDING INDEX
2.17
2.12
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
SP-SM
SM
SC
CH
SM-SC
CL
MH
ML
CL-ML
OL
OH
Pt
USCS SOIL TYPES
2.12
2.08
S
LS
SC
SCL
C
SL
SiCL
CL
SiC
SiL
L
Si
Pt
USDA SOIL TYPES
LEGEND
NUMBER OF SAMPLES USED IN ANALYSIS
PLUS ONE STANDARD DEVIATION FROM MEAN
MEAN
MINUS ONE STANDARD DEVIATION FROM MEAN
HIGH TOPOGRAPHY, WET-SEASON CONDITION
ALL SITES, WET-SEASON CONDITION
LOW TOPOGRAPHY, WET-SEASON CONDITION
LOW TOPOGRAPHY, HIGH-MOISTURE CONDITION
REMOLDING INDEX
MEAN AND RANGE OF ± ONE STANDARD DEVIATION FOR VARIOUS MOISTURE CONDITIONS

PLATE 3

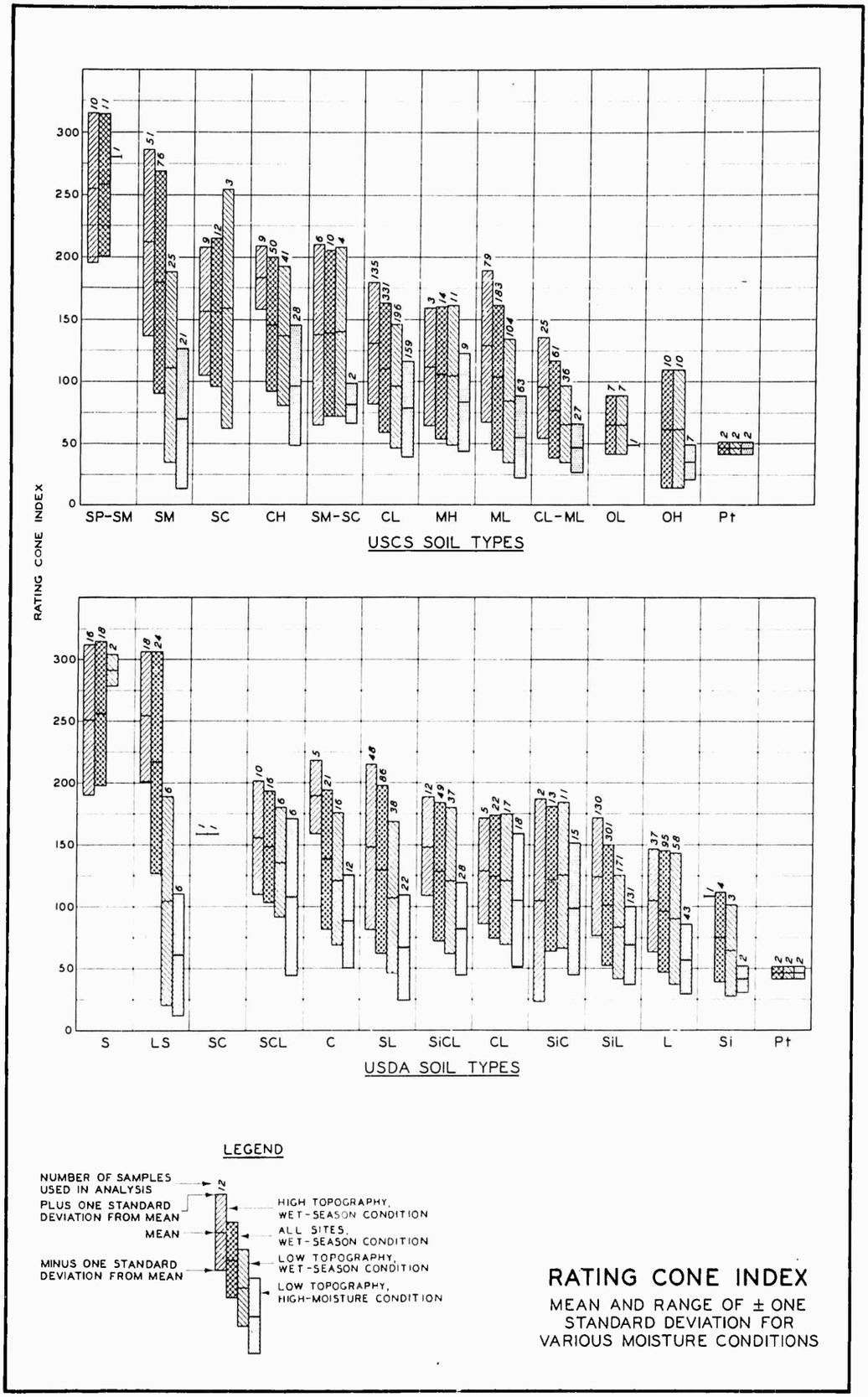
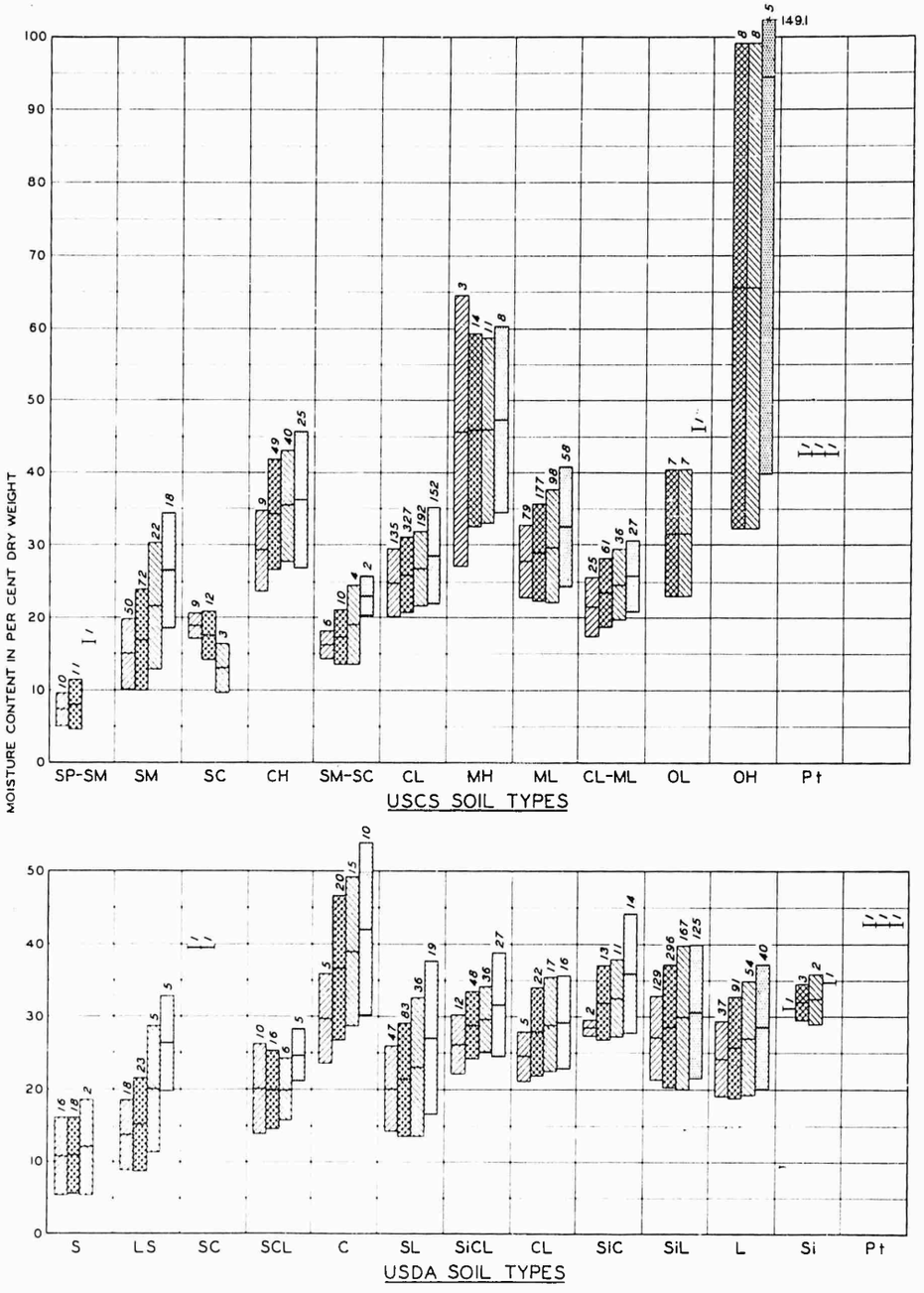

RATING CONE INDEX
0
50
100
150
200
250
300
SP-SM
SM
SC
CH
SM-SC
CL
MH
ML
CL-ML
OL
OH
Pt
USCS SOIL TYPES
S
LS
SC
SCL
C
SL
SiCL
CL
SiC
SiL
L
Si
Pt
USDA SOIL TYPES
LEGEND
NUMBER OF SAMPLES USED IN ANALYSIS
PLUS ONE STANDARD DEVIATION FROM MEAN
MEAN
MINUS ONE STANDARD DEVIATION FROM MEAN
HIGH TOPOGRAPHY, WET-SEASON CONDITION
ALL SITES, WET-SEASON CONDITION
LOW TOPOGRAPHY, WET-SEASON CONDITION
LOW TOPOGRAPHY, HIGH-MOISTURE CONDITION
RATING CONE INDEX
MEAN AND RANGE OF ± ONE STANDARD DEVIATION FOR VARIOUS MOISTURE CONDITIONS

PLATE 4



MOISTURE CONTENT

MEAN AND RANGE OF ± ONE STANDARD DEVIATION FOR VARIOUS MOISTURE CONDITIONS

PLATE 5

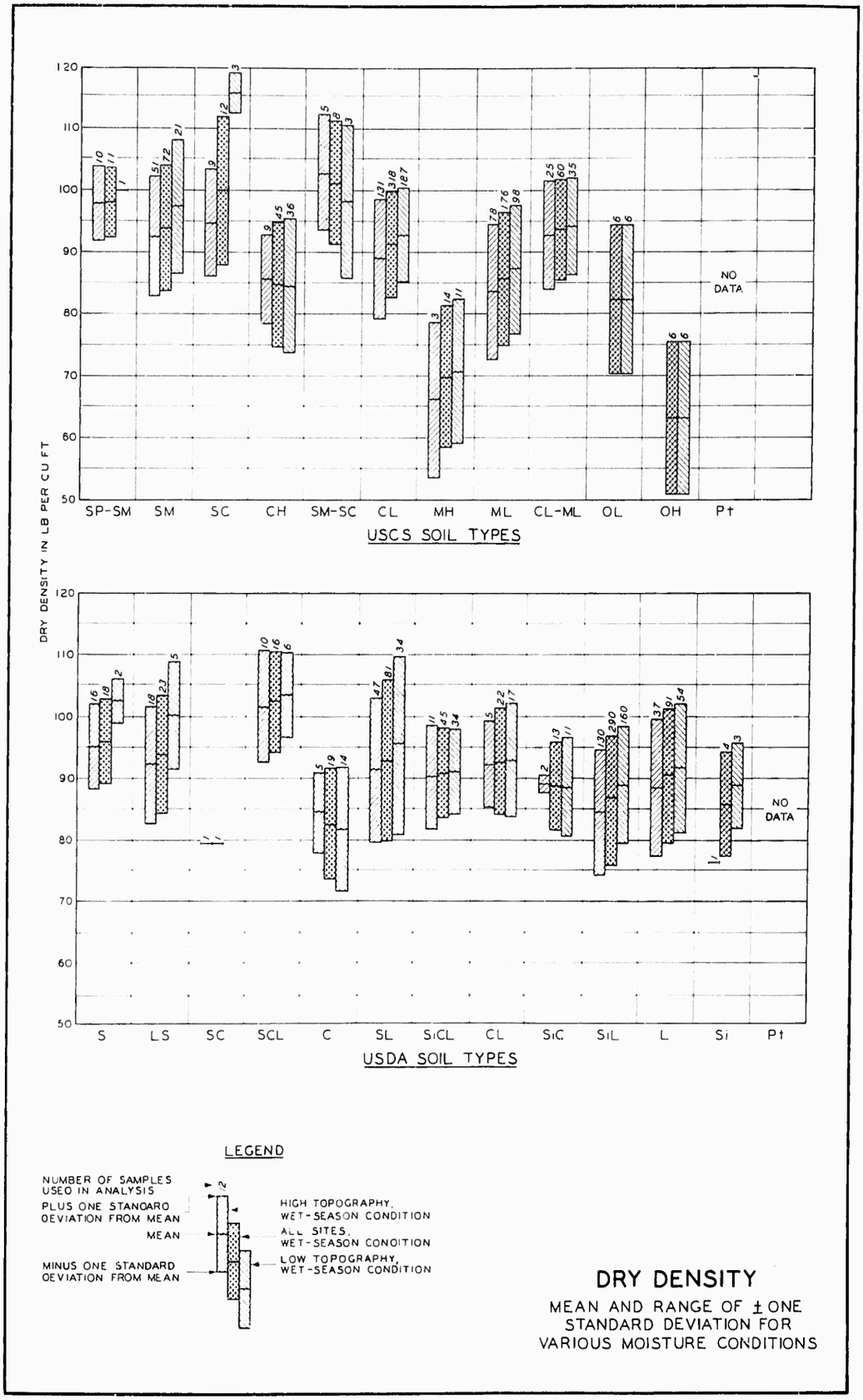
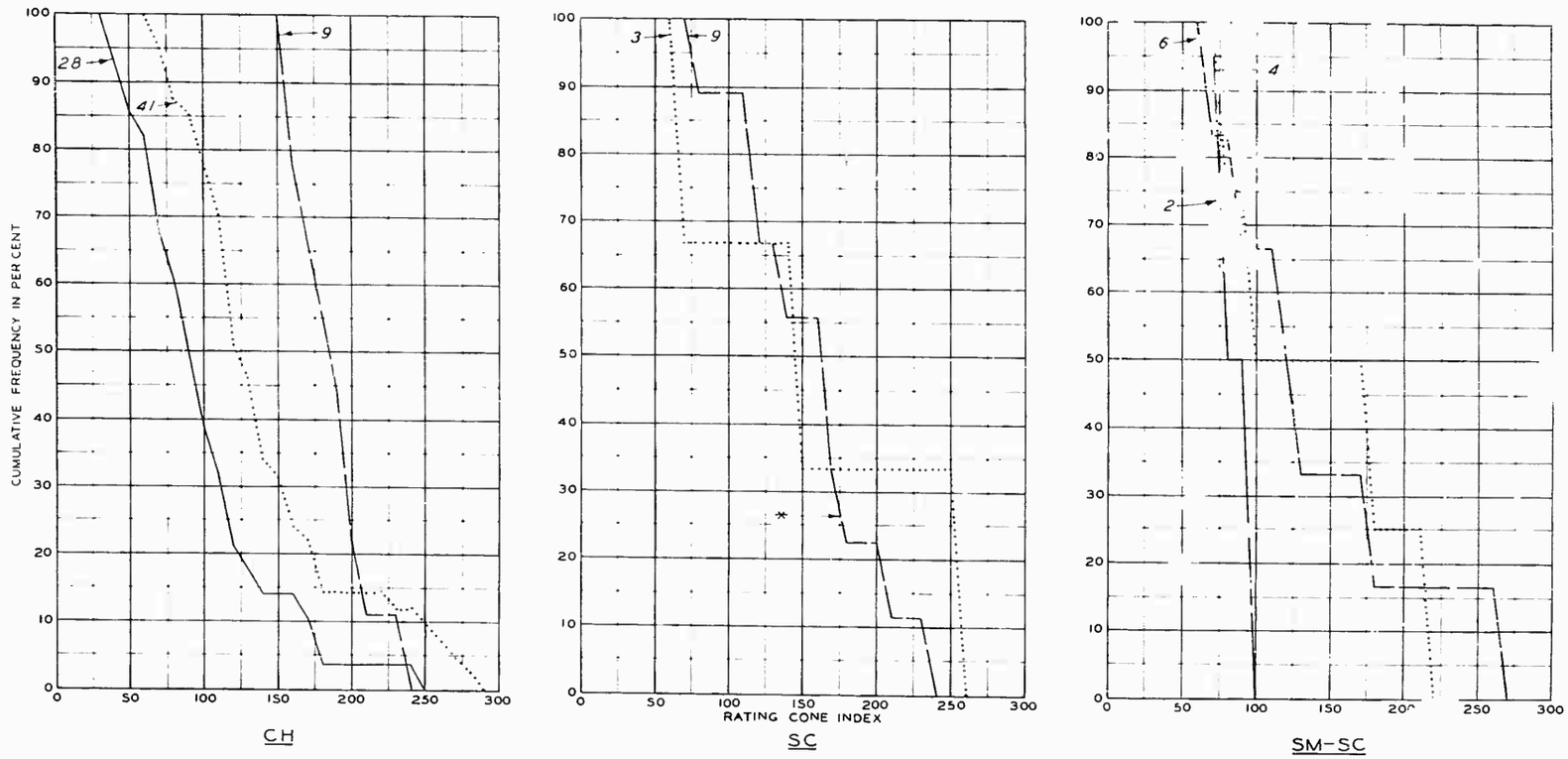

DRY DENSITY IN LB PER CU FT
120
110
100
90
80
70
60
50
SP-SM
SM
SC
CH
SM-SC
CL
MH
ML
CL-ML
OL
OH
Pt
NO DATA
USCS SOIL TYPES
S
LS
SC
SCL
C
SL
SiCL
CL
SiC
SiL
L
Si
Pt
NO DATA
USDA SOIL TYPES
LEGEND
NUMBER OF SAMPLES USED IN ANALYSIS
PLUS ONE STANDARD DEVIATION FROM MEAN
MEAN
MINUS ONE STANDARD DEVIATION FROM MEAN
HIGH TOPOGRAPHY, WET-SEASON CONDITION
ALL SITES, WET-SEASON CONDITION
LOW TOPOGRAPHY, WET-SEASON CONDITION
DRY DENSITY
MEAN AND RANGE OF ± ONE STANDARD DEVIATION FOR VARIOUS MOISTURE CONDITIONS

PLATE 6



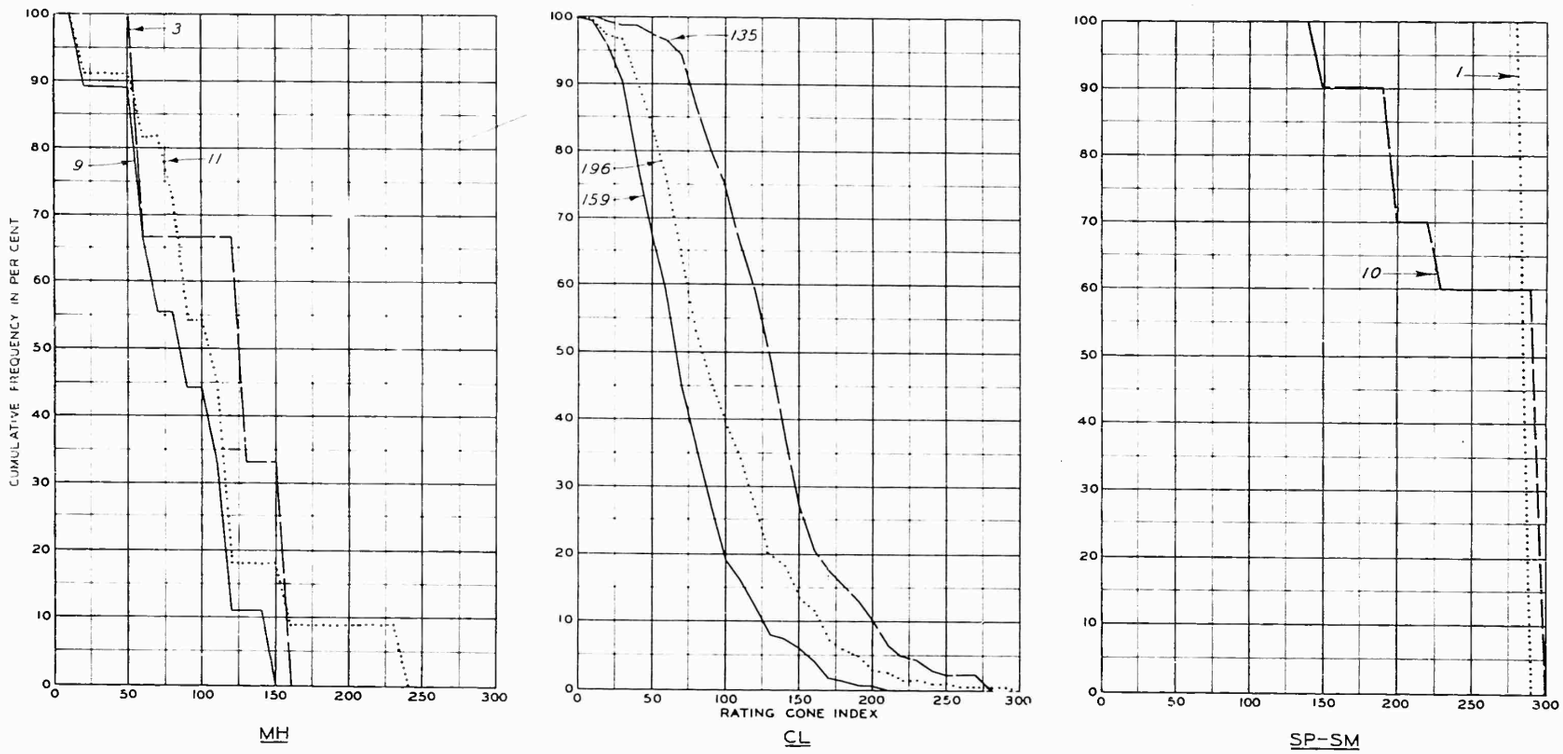
CUMULATIVE FREQUENCY OF RATING CONE INDEX

USCS SOILS

CH, SC, AND SM-SC

PLATE 7

PLATE 8



LEGEND

LOW TOPOGRAPHY, HIGH-MOISTURE CONDITION

LOW TOPOGRAPHY, WET-SEASON CONDITION

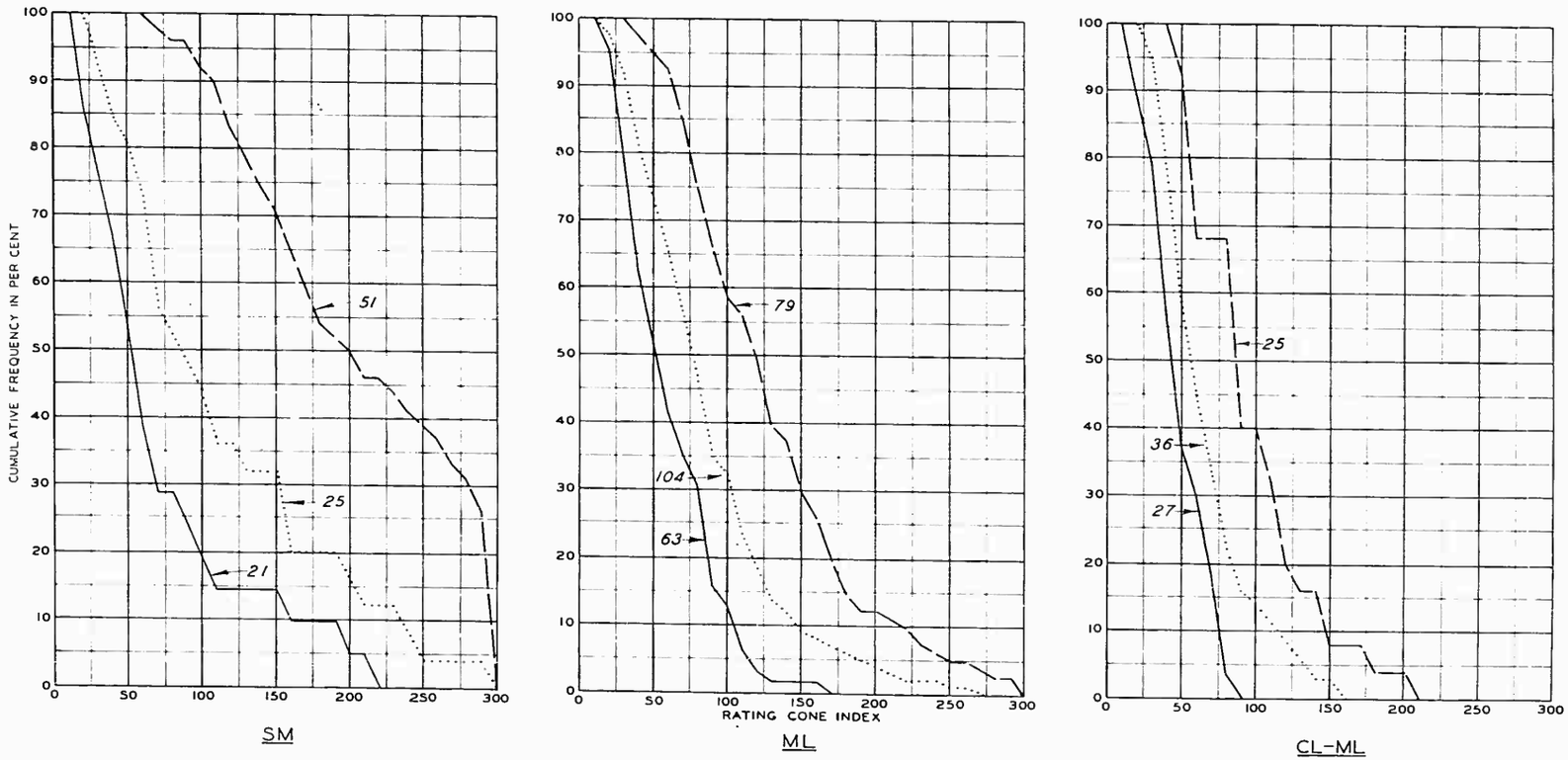
HIGH TOPOGRAPHY, WET-SEASON CONDITION

130 NUMBER OF SAMPLES USED IN ANALYSIS

CUMULATIVE FREQUENCY OF RATING CONE INDEX

USCS SOILS

MH, CL, AND SP-SM



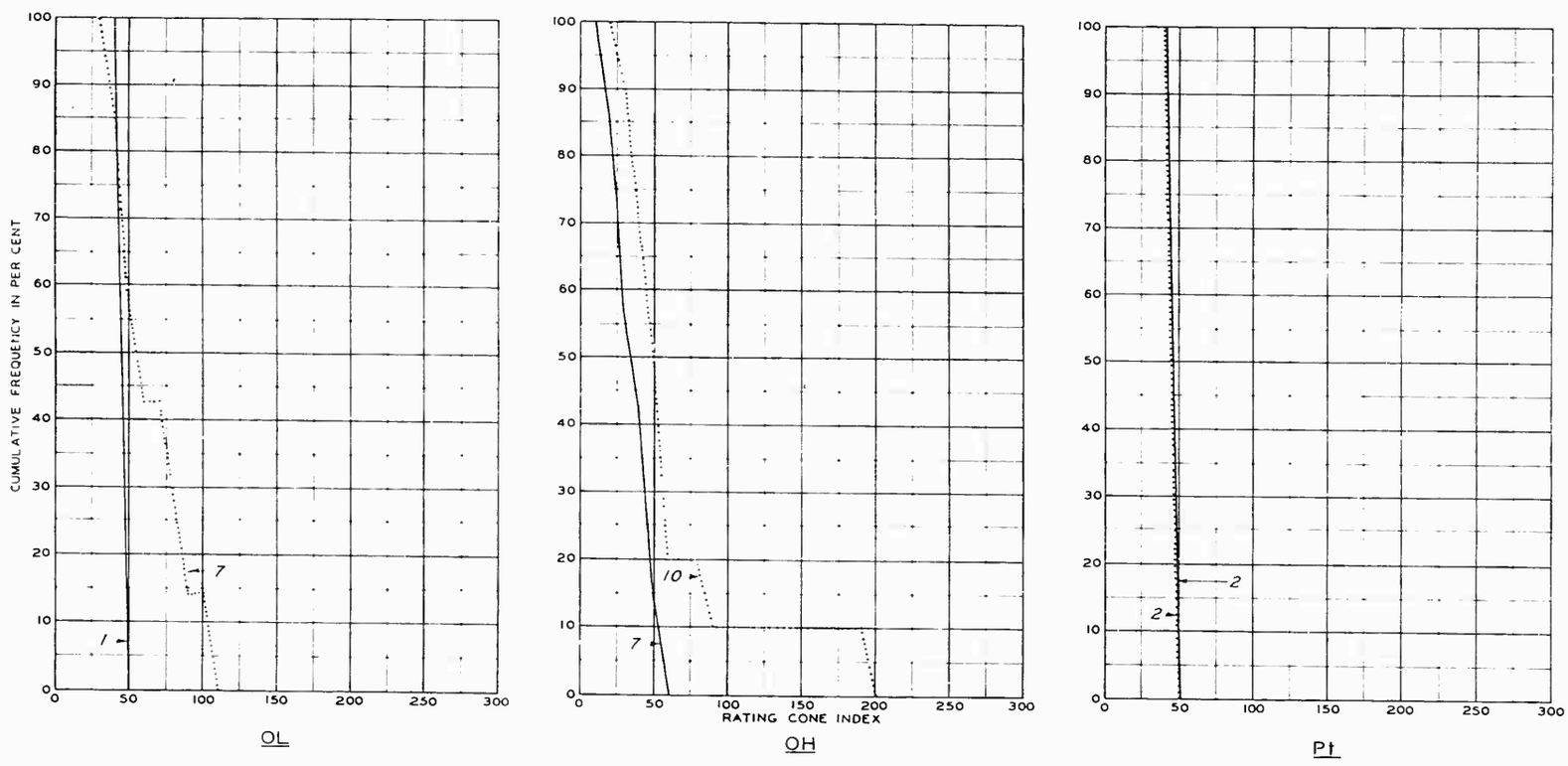
CUMULATIVE FREQUENCY OF RATING CONE INDEX

USCS SOILS

SM, ML, AND CL-ML

PLATE 9

PLATE 10



LEGEND

——— LOW TOPOGRAPHY, HIGH-MOISTURE CONDITION

····· LOW TOPOGRAPHY, WET-SEASON CONDITION

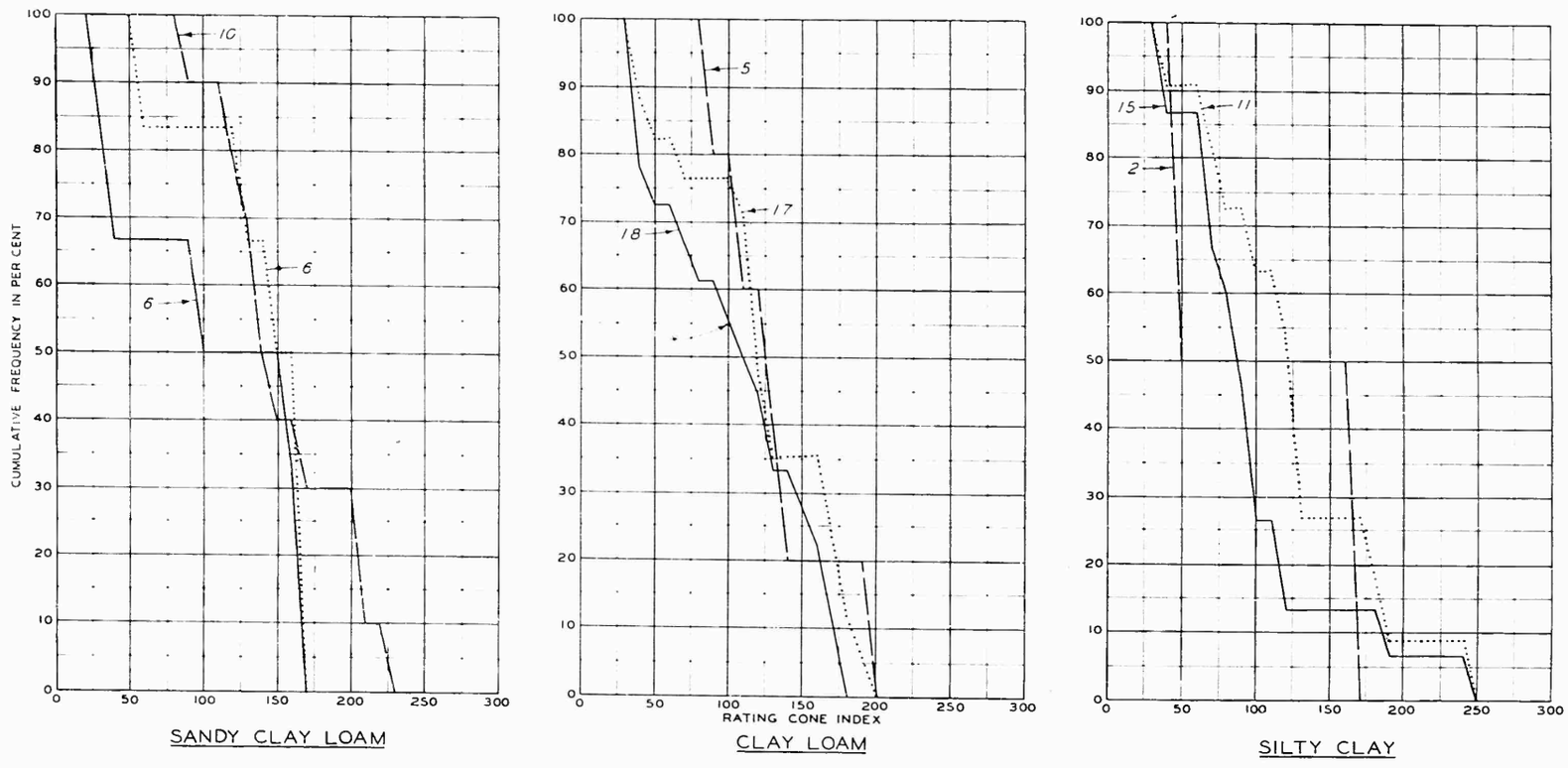
— — — HIGH TOPOGRAPHY, WET-SEASON CONDITION

130 NUMBER OF SAMPLES USED IN ANALYSIS

CUMULATIVE FREQUENCY OF RATING CONE INDEX

USCS SOILS

OL, OH, AND Pt



LEGEND

——— LOW TOPOGRAPHY, HIGH-MOISTURE CONDITION

····· LOW TOPOGRAPHY, WET-SEASON CONDITION

— — — HIGH TOPOGRAPHY, WET-SEASON CONDITION

130 NUMBER OF SAMPLES USED IN ANALYSIS

* SAMPLE INTERPRETATION: 55% OF SAMPLES OCCURRED AT RATING CONE INDEX OF 100 OR HIGHER

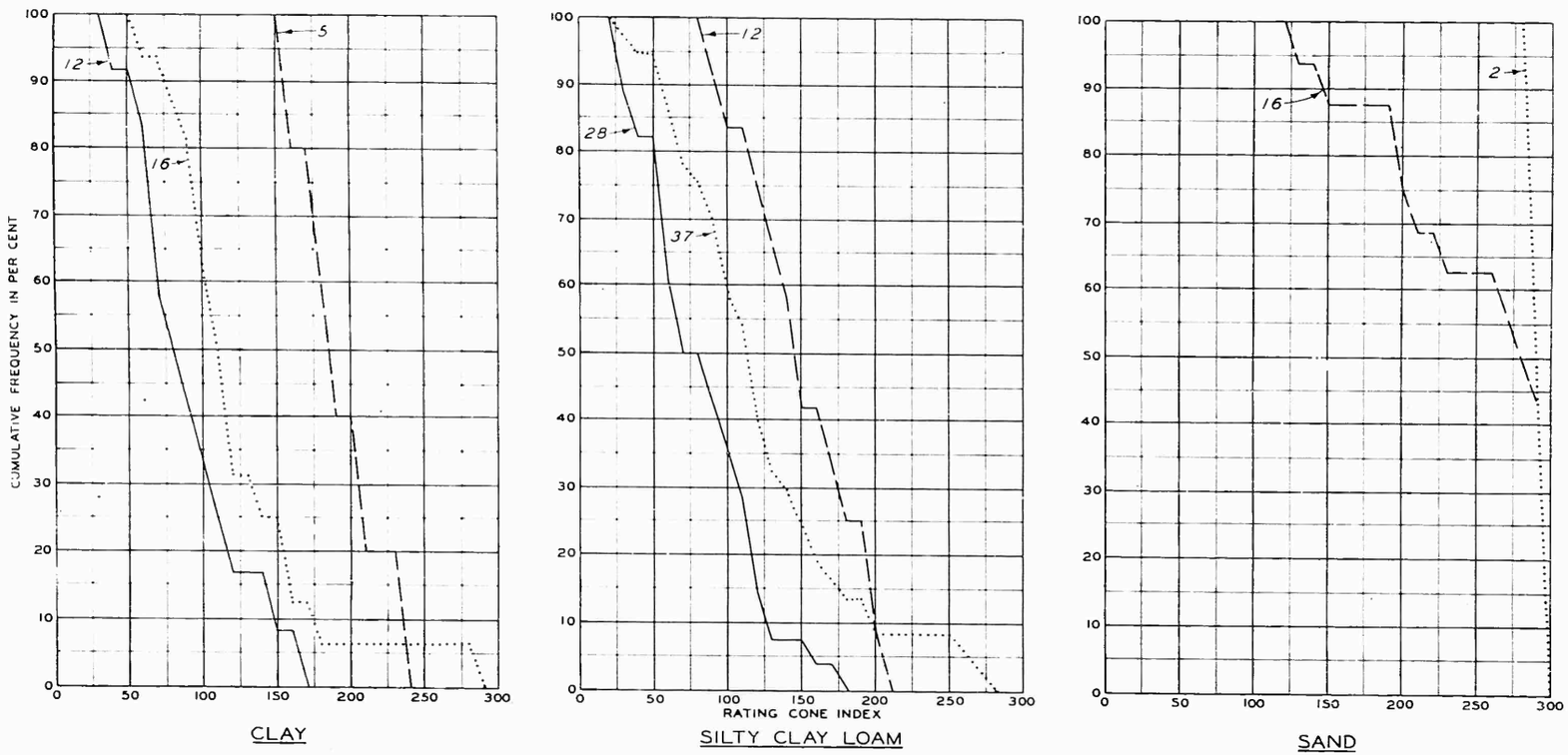
CUMULATIVE FREQUENCY OF RATING CONE INDEX

USDA SOILS

SANDY CLAY LOAM, CLAY LOAM, AND SILTY CLAY

PLATE II

PLATE 12



LEGEND

——— LOW TOPOGRAPHY, HIGH-MOISTURE CONDITION

····· LOW TOPOGRAPHY, WET-SEASON CONDITION

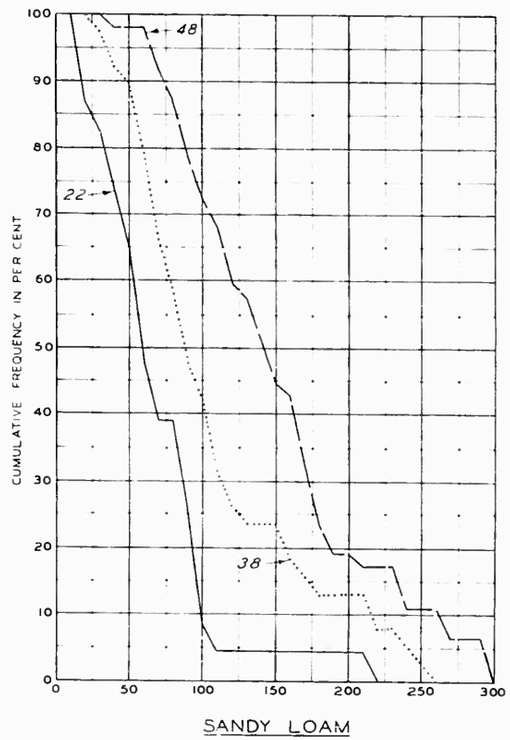
— — — HIGH TOPOGRAPHY, WET-SEASON CONDITION

130 NUMBER OF SAMPLES USED IN ANALYSIS

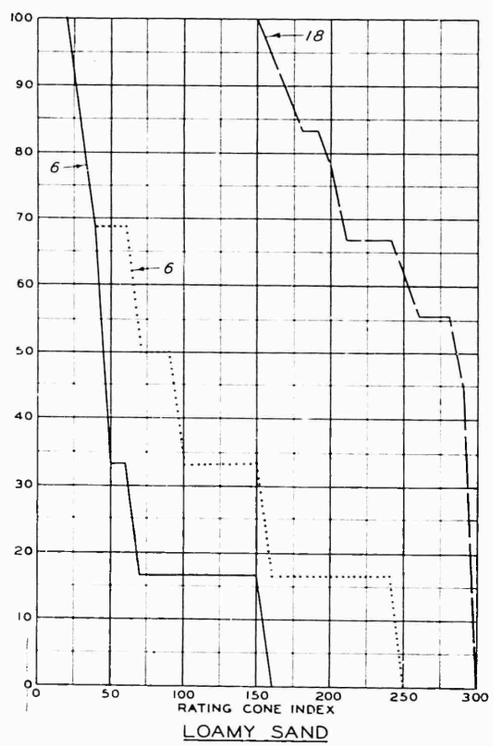
CUMULATIVE FREQUENCY OF RATING CONE INDEX

USDA SOILS

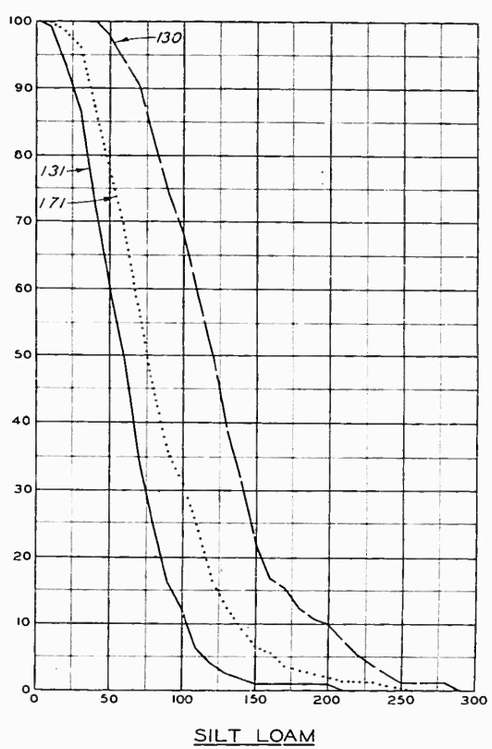
CLAY, SILTY CLAY LOAM, AND SAND



SANDY LOAM



LOAMY SAND



SILT LOAM

LEGEND

——— LOW TOPOGRAPHY, HIGH-MOISTURE CONDITION

····· LOW TOPOGRAPHY, WET-SEASON CONDITION

— — HIGH TOPOGRAPHY, WET-SEASON CONDITION

130 NUMBER OF SAMPLES USED IN ANALYSIS

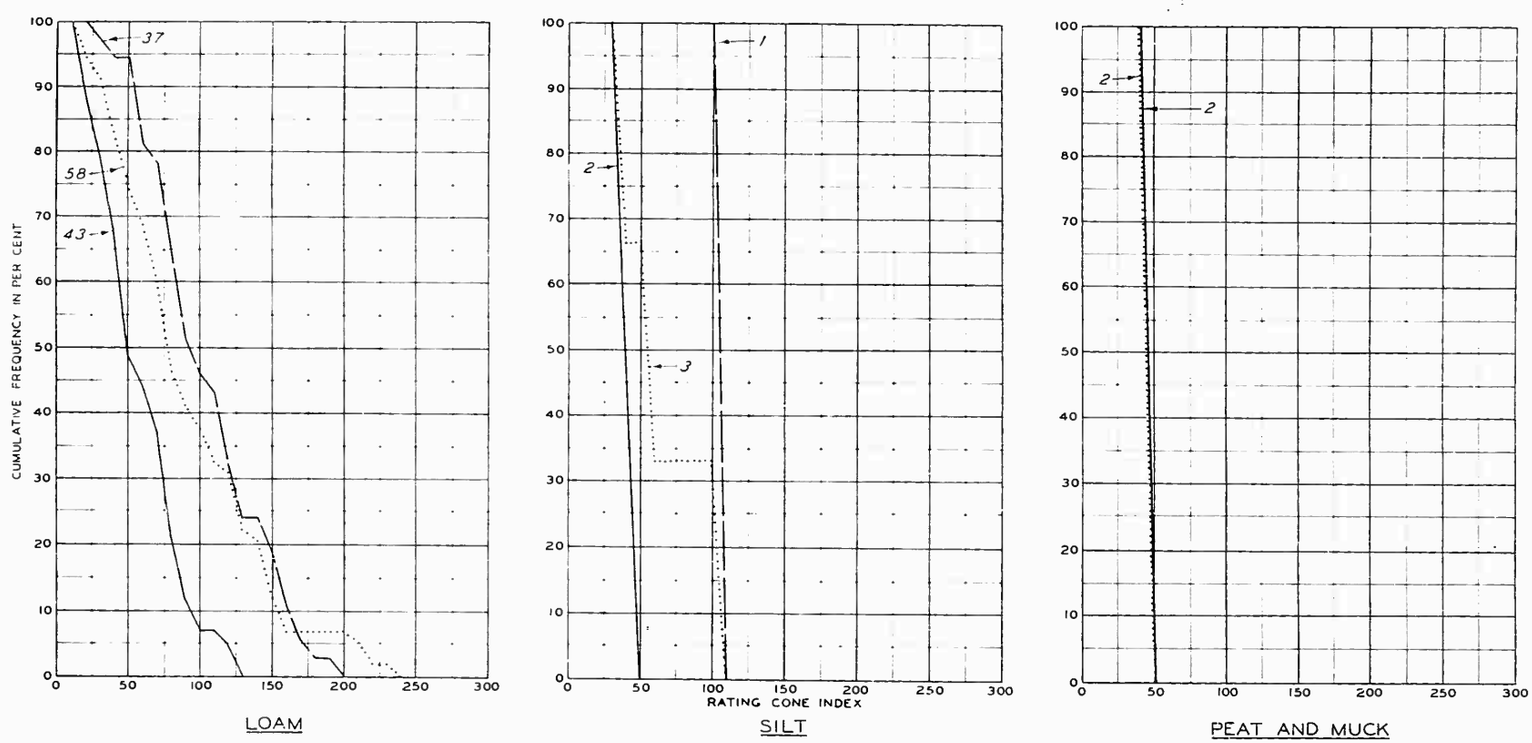
CUMULATIVE FREQUENCY OF RATING CONE INDEX

USDA SOILS

SANDY LOAM, LOAMY SAND, AND SILT LOAM

PLATE 13

PLATE 14



CUMULATIVE FREQUENCY OF RATING CONE INDEX

USDA SOILS

LOAM, SILT, AND PEAT AND MUCK

APPENDIX A: GENERAL PROCEDURES FOR OBTAINING AND TABULATING PERTINENT DATA

1. The following paragraphs discuss the general procedures used for obtaining and tabulating the data in this report.

Strength Data

Cone index

2. In Waterways Experiment Station trafficability studies several CI profiles usually were determined. Each profile consisted of a reading at the surface and at 3-in. increments to the maximum depth of penetration (30 in., or less if a reading greater than 300 was encountered). The readings for each depth were averaged and the pertinent averages were used to determine an over-all average for the critical layer. For example, the average CI for the 6- to 12-in. layer was determined from the average values for the 6-, 9-, and 12-in. depths, respectively. The rules for averaging CI when values greater than 300 are encountered were generally followed in the tabulation of data, and are as follows:

a. The first 300+ value encountered in a penetration is considered a measured value of 300 provided the material being tested is not rock.

b. Where there is evidence of a strength increase below the point at which a 300+ value is obtained and the material is not rock, values of 300 are assigned to the respective depths below the 300+ reading.

c. The 300+ values for rock are disregarded in the determination of average CI for a depth.

d. If two-thirds or more of the readings for a particular depth are maximum (300) values, the average for that depth is considered to be 300.

e. If more than one-tenth of the readings within a layer are 300, a plus sign is assigned to the average for the layer. The sign, however, is disregarded in the analysis of the data.

Remolding index

3. Remolding index test procedures for fine-grained soils and coarse-grained soils with fines are as follows:

a. Fine-grained soils. A soil sample taken with a trafficability sampler is extruded into a remolding cylinder mounted on a base. The sample is then pushed to the bottom of the remolding cylinder with a drop hammer. CI's are read at the surface and at 1-in. increments to a depth of 4 in. with a 0.5-sq-in. cone penetrometer. One hundred blows of a 2-1/2-lb hammer, dropped 12 in., are then applied and CI's are obtained in the remolded soil. The RI is determined by dividing the sum of the five CI readings made after remolding by the sum of the five readings made before remolding.

b. Coarse-grained soils with fines. The RI test for these soils is conducted in the same manner as for fine-grained soils, with two exceptions. The CI readings are obtained with a 0.2-sq-in. cone instead of the 0.5-sq-in. cone used on the fine-grained soils, and the sample is remolded by dropping the cylinder and metal base with the sample inside 25 times onto a wooden base from a height of 6 in. The annular space between the cylinder and metal base is sealed to prevent drainage.

4. Rules used in the computation of the RI are as follows:

a. A CI of 300 is assigned each depth that could not be penetrated because of the firmness of the sample.

b. The before- and after-remolding CI readings must be of equal number and taken at corresponding depths. If one of the readings has been omitted from the tabulation, the corresponding reading for that depth is excluded from the computation.

c. A CI of 300 is used in the computation only when it pairs with a smaller value obtained either before or after remolding at the corresponding depth.

d. The test is valid when the before- and after-remolding readings at two or more depths are less than 300 for one or both of the paired readings. The test is void when surface readings only are below 300.

5. Generally, two or more remolding tests are run at a site to provide a valid average RI for the soil. Two tests are considered sufficient, provided the RI's do not differ by more than 0.12. However, in some areas of highly variable soils, a third, and occasionally a fourth, test is required in order to provide at least two values within the permissible 0.12 variation. Values that do not fall within this limit are omitted from the computation of average RI. If, however, the index for the third or fourth test falls between the indexes for the first two tests, or if there is no

close agreement between values, the indexes for all the tests are used to determine an average.

Soil Classification

Unified Soil Classification System

6. Although the USCS soil types included in this study can be identified in the field with a fair degree of accuracy, all were identified by their Atterberg limits and grain-size distribution as determined by laboratory procedures.* Usually one or two samples within a 6-in. layer were obtained with a trafficability sampler for Atterberg limits and mechanical analysis determinations. Where two or more samples were taken at a site the data for each Atterberg limits and mechanical analysis test were averaged.

USDA textural classification system

7. Laboratory techniques and procedures were used to identify the soils within the 6- to 12-in. layer in regard to USDA textural names. Identification of soils within the 0- to 6-in. or surface layer was based either on laboratory procedures or on the textural nomenclature accompanying the soil series name obtained from USDA soil maps. The same samples obtained with a trafficability sampler for USCS soil identification purposes were used to establish the USDA textural name. Where more than one sample was obtained at a site, a mechanical analysis was run on each and the textural name was identified, based on averaged values of the three textural sizes. In all except a few soils, the gravel content was insignificant; consequently, the term gravelly generally was not applied to the textural name. The specific sand sizes were also excluded from the textural description.

USDA soil series

8. The soil series names were included in the site-data tables for

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* The liquid limits of the nonplastic soils of the survey sites were determined by a modified procedure,[9]** which is presently being studied at the Waterways Experiment Station to determine its possible utility. The inclusion in this report of data obtained by means of the modified method in no way indicates that it is approved for official use.

** Raised numbers refer to similarly numbered references listed at end of main report.

information purposes where such information was available from USDA soil maps or from regional soil correlators or surveyors of the Soil Conservation Service. The names derived from maps were obtained from maps in existence at the time the data were collected, and in some cases may be different from series names obtained from recently revised descriptions or maps of the area.

Soil-Moisture Data

In-place moisture content

9. In this report, all determinations of natural field moisture content and laboratory tension moisture content are expressed as a percentage of the dry weight of the soil. Field soil-moisture contents were obtained by gravimetric or electrical-resistance methods. Instruments used for gravimetric sampling were the modified King tube (Veihmeyer tube),[13] the open-sided (Oakfield) sampler,[3] and the Hvorslev trafficability sampler (see TM 3-240, 3rd Supplement). The moisture content was computed as follows:

$$\text{moisture content} = \frac{\text{weight of water in sample}}{\text{oven-dry weight of soil in sample}} \times 100$$

Fiberglas electrical-resistance units were used to determine the soil-moisture contents at most of the prediction-development sites (discussed in paragraph 16, Appendix B). The moisture-resistance relation for each unit was determined from a calibration curve of resistance in ohms versus moisture content determined from modified King-tube gravimetric samples taken throughout the complete range of moistures for the site. Details of the units, their installation, and the problems involved in their calibration and use are discussed in several reports.[3,7c,11,12]

Per cent saturation

10. Per cent saturation of a soil may be expressed by the equation:

$$\text{per cent saturation} = \frac{\text{moisture content, \% dry weight, of soil}}{\text{moisture content, \% dry weight, of soil at 100\% saturation}} \times 100$$

where

moisture content, % dry weight, of soil at 100% saturation

$$= \left(\frac{\text{unit weight of water (62.4 lb/cu ft)}}{\text{dry density of the soil (lb/cu ft)}} - \frac{1}{\text{specific gravity}} \right) \times 100$$

The per cent saturation of nonorganic, 6- to 12-in. layer, field samples and laboratory tension moisture soil samples was determined within 1% of the computed value from density-moisture content curves developed from the equation above. Two sets of curves were employed. One set, based on a specific gravity of 2.70, was used for CH soils; the other set, based on a specific gravity of 2.65, was used for the remaining USCS soils, with the exception of the organic soil types. These two specific gravities are assumed averages for the respective soil types, based on discussions with WES personnel engaged in laboratory soil studies. The values for most of the data used in this report probably do not vary by more than ± 0.05 units from the assumed soil-type average. A 0.05 variation in specific gravity for a soil with an average density and high moisture content results in approximately a 2 to 3% variation in per cent saturation. Thus, the true per cent saturation for the majority of nonorganic soils included in this study would vary from 0 to 2% or perhaps as much as 3% from the estimated per cent saturation. The specific gravities of organic soils (OL, OH, Pt) vary appreciably with organic content; consequently, no attempt was made to estimate per cent saturation for these soils.

Field-maximum and field-minimum moisture contents

11. The field-maximum and field-minimum values for the 6- to 12-in. soil layer of the prediction-development sites (table B3) were obtained from records of moisture contents usually obtained at least once a week over a period of one or more years. The field-minimum values are included in the data tables for information purposes only. The field-maximum and field-minimum values for each site define the limits of its moisture range.

Laboratory moisture content

12. Moisture contents of 6- to 12-in. layer soil samples taken with a modified San Dimas or drive-type sampler[1] were determined for various

tensions in the laboratory. These data were used in the development of soil moisture-prediction relations.

13. 0.06-atmosphere tension (60 cm water). Moisture-content data for this tension are included for information purposes in the prediction-development, survey, and high-water-table site tables (B3, B4, and B6, respectively).

14. 0.005-atmosphere tension. Moisture contents for this tension are included in the prediction-development site data, table B3. This tension moisture value and the value of the average highest moisture content obtained on field samples from the 6- to 12-in. layer were compared for individual sites to determine whether the soil, in situ, approached saturation conditions. This information was utilized in the analysis.

15. 0-atmosphere tension. The soil sample at this tension approaches but usually does not attain saturation, even though soaked in water for periods ranging from 24 hours (coarse-grained soil) to 72 hours (fine-grained soil), due mainly to the partial entrapment of air within the interstices. A small amount of water probably drains out in the process of transferring the sample from the water-filled pan to the container that is weighed, although every effort is made to keep drainage to a minimum. The loss is probably greater in the coarse-grained soils. The 0-tension moisture contents were determined for soils of the survey and high-water-table sites, and these values are shown in tables B4 and B6, respectively. The 0-tension value for each high-water-table site was compared with the field moisture content. The field moistures presumably were at maximum since the free-water elevations at the sites lay within or, in most cases, above the 6- to 12-in. soil layer. The study showed the 0-tension laboratory moistures to be about 1% greater than the field-maximum moistures. This information was applied to moisture-content data of the low-topography survey sites. If the largest measured field moisture content at a site was not more than 1% less than the 0-tension value, then the moisture content of the soil was assumed to be at field-maximum and under high-moisture condition.

Density

16. The densities of soils in the 6- to 12-in. layer are included in

the site-data tables (tables B1-B6). For most sites, the density value is an average of two or more determinations made on samples of a specific volume obtained with the trafficability sampler or modified San Dimas sampler. In many cases these samples also were used for field moisture or laboratory tension moisture determinations.

Site Environmental Factors

17. The vegetation, land use, landform, topographic position, and drainage of a site or area may directly or indirectly affect its trafficability conditions. Where such information could be ascertained for a site from soil series or general terrain descriptions, or where the information was noted in previous site-study reports, a brief, generalized description of these features is included in the data tables. The descriptions of vegetation, land use, and landform are presented for information purposes only. It was beyond the scope of this report to analyze these features in terms of their effect on conditions of soil moisture or soil strength, or as an obstacle to vehicular traffic. The topographic position, and surface (external) and internal drainage characteristics of a site were considered only as they influenced the perched or permanent water-table depth at the site, and thus its topography class.

Vegetation

18. The vegetal cover is classified in eight general categories:

a. Bare
b. Herbaceous
c. Herbaceous with some trees
d. Brush
e. Hardwood forest
f. Mixed pine-hardwood
g. Conifer forest
h. Cultivated row crop

The type or species of trees or crops, such as loblolly pine, elm, oak, wheat, corn, or flax, is often included in the vegetal description of the site.

Land use

19. Land use is classified in the following general categories:

a. Undisturbed

b. Logged

c. Grazed

d. Cultivated

e. Cultivated, idle

f. Cultivated, grazed

g. Hay

h. Lawn

The category that characterized the land use at the time of testing was used to describe the site.

Landform

20. The following tabulation is a key to the landform symbols used in the tables. The classification system is based upon decisions reached at a conference held by the Corps of Engineers in January 1953 at the Waterways Experiment Station, and revised in February 1957:

I. GLACIAL

- A. Nonsoil
- B. Ice
- C. Lacustrine
- D. Drift
  - 1. Outwash
  - 2. Till plain
    - a. Old-layered
    - b. Young-plastic
    - c. Young-granular
  - 3. Moraine
  - 4. Esker
  - 5. Kame terrace

II. WATER DEPOSITED

- A. Delta
  - 1. Natural levee
  - 2. Swamp

II. WATER DEPOSITED (CONT'D)

- B. Flood plain - active
  - 1. Undifferentiated alluvium
  - 2. Natural levee
    - a. Crevasse
  - 3. Swamp
  - 4. Point bar
    - a. Ridge
    - b. Swale
- C. Terrace
  - 1. Alluvial
  - 2. Lacustrine
  - 3. Marine
- D. Alluvial Fan
- E. Coastal Plain
  - 1. Beach
  - 2. Marsh
  - 3. Dune
  - 4. Undifferentiated
- F. Desert Plain
- G. Lacustrine
- H. Bajada
- I. Playa

III. AEOLIAN

- A. Loess
  - 1. Hill
  - 2. Flat
- B. Sand

IV. RESIDUAL

- A. Sedimentary Rock
  - 1. Limestone
  - 2. Shale
  - 3. Sandstone
  - 4. Limestone and shale
  - 5. Sandstone and shale
  - 6. Chalk
- B. Igneous and Metamorphic Rock
  - 1. Basalt
  - 2. Metamorphic
  - 3. Intrusive

IV. RESIDUAL (CONT'D)

- C. Unconsolidated Sediment
  - 1. Clay
  - 2. Sand
  - 3. Undifferentiated

V. MISCELLANEOUS

- A. Evaporite
- B. Pyroclastic
- C. Organic
  - 1. Muskeg
  - 2. Peat
  - 3. Swamp
- D. Laterite
- E. Varved clay
- F. Colluvial

21. This landform classification with some modification has been used in the reports, Application of Airphoto Pattern Analysis to Soil Trafficability Studies,[5] as a major component in the study of wet- and dry-season soil trafficability conditions. The reports contain a discussion and analysis of soil trafficability factors and a general seasonal evaluation of cross-country vehicular movement for each major landform type.

Surface (external) and internal drainage

22. The surface and internal drainage conditions of a site are described in the following terms:

a. Good

b. Medium or moderate

c. Poor

Topographic position

23. The topographic position of a site is indicated as upland, terrace, or bottomland, with additional information such as ridge, slope, flat, or depression included. The categories considered are as follows:

a. Upland ridge

b. Upland upper slope

c. Terrace slope

d. Upland lower slope

e. Upland flat

f. Terrace flat

g. Bottomland flat

h. Upland depression

i. Bottomland depression

APPENDIX B: SOURCES OF, AND DETAILED PROCEDURES USED IN OBTAINING DATA

1. The soil and site data presented in tables B1-B6 were used in the analyses and form the basis for the trafficability classification scheme. The data were obtained in six different trafficability programs conducted during the period 1950-1958 at 1310 sites located in 44 states. Each table includes all or part of the data on texture, Atterberg limits, USDA and USCS soil type, strength (CI, RI, and RCI), moisture content, moisture tension, per cent saturation, and density of fine-grained soils and coarse-grained soils with fines within the 6- to 12-in. layer, and the USDA textural soil type of the 0- to 6-in. layer. The moisture and strength data generally are values obtained only during the wet season from sites located in the humid, temperate climatic regions of the United States or are values from sites located in subhumid or arid climatic areas with moistures approximating wet-season conditions. The location and the number of sites with strength data for each study source within a county of a state are shown on a map of the United States, fig. B1. The sites are located in 41 states. Other information (where known) for a site, presented in the tables, includes county and state location, soil series and type, topography class, depth to water table, topographic position, slope, surface and internal drainage, vegetation, land use, and landform.

2. The paragraphs that follow are grouped according to the six major sources of site data and contain a detailed discussion of soil sampling tools, frequency of visits to a site and number of measurements taken during each visit, basis for selecting data under wet-season and high-moisture conditions, number and geographical distribution of sites, and other important features of the test program relevant to the data for each of the sources.

Traffic-Test Site Data

3. The traffic-test soil and site data, table B1, were obtained from 142 tests conducted at 36 natural-ground sites in the central (Indiana, Kentucky), southeastern (Alabama, Mississippi, North Carolina), and northeastern (New York, New Hampshire, Vermont) sections of the United States

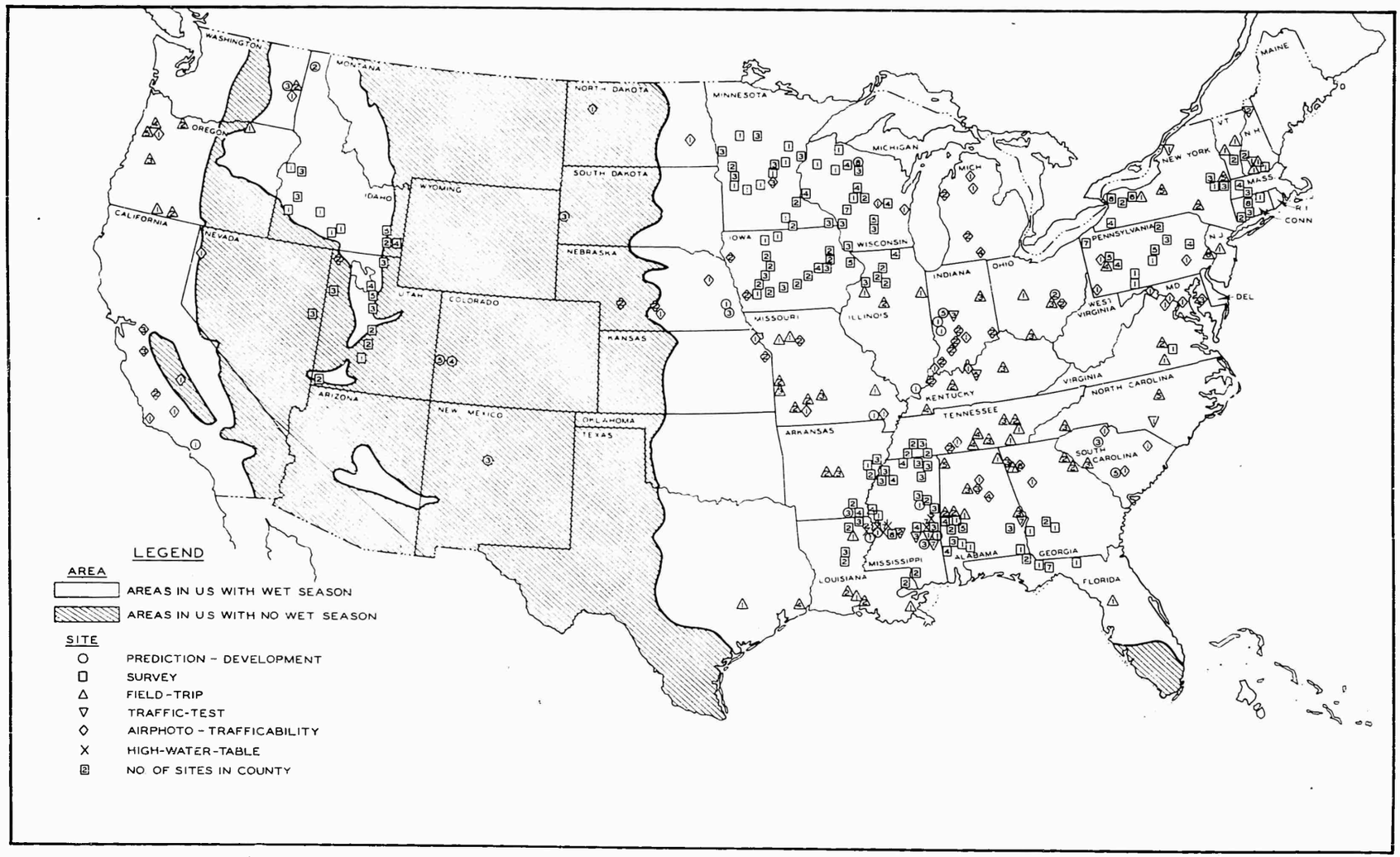

Fig. B1. Locations of strength-data test sites

during the spring months of 1950 through 1953. A complete discussion of the test program and a detailed tabulation of the data obtained in each test are contained in several reports, the 10th, 12th, and 13th Supplements of the TM 3-240 series. Most of these data were used in the development of the original trafficability soil classification scheme (11th Supplement).

Soil data

4. Cone index measurements were usually taken at 4-ft intervals along predetermined center lines of both tracks of a test vehicle's 100-ft-long test lane. Measurements at depths of 6, 9, and 12 in. were averaged to determine the average CI for the 6- to 12-in. layer. At least four RI tests, two or more tests at each of two stations located on opposite ends of the left and right side of the lane, were made and the resulting values were averaged. The average RI value for the 6- to 12-in. layer was multiplied by the average CI value to provide a reliable average RCI for the test lane. Usually four or more samples, taken with a trafficability sampler at the same two stations as were used for RI tests, were obtained for moisture-content and density measurements. The values for each measurement were averaged for the 6- to 12-in. layer. One sample, required for mechanical analysis and Atterberg limits determinations, usually was taken in the central part of a uniform soil area of several test lanes. Occasionally, a sample was taken in the center of each of the several lanes.

5. In some traffic-test areas, an appreciable number of vehicle tests, each with its own data, were run within short distances of each other. If each test was considered a site and included in the data analysis, undue emphasis would be given to those areas with abundant tests. In order to eliminate this bias, soil data from two or more test lanes within a small area and with the same USCS-USDA soil types were combined and averaged for each soil variable, respectively. For analysis purposes, this small area of uniform soil was considered a site, and the averaged test-data were included in the tables under the heading "Wet-Season Condition." The data from only one test lane at a site, however, were included in the tabulation of high-moisture condition, provided of course that this condition existed during the time of testing. If more than one test lane was at high moisture, data from the lane with the lowest RCI were used. A condition of high moisture was assumed for a test if the water table was within

4 ft of the surface for fine-grained soils, or within 2 ft of the surface for coarse-grained soils with fines, or, if no water-table data were available, when the per cent saturation was close to or at an estimated maximum for the soil type.

Site data

6. The geographic locations and topographic positions of the test lanes and the period of testing were usually selected on a basis of poor soil trafficability conditions. The sites were generally low-lying and subject to high water tables (all classified as low topography). Consequently, the wet-season data are biased toward somewhat higher moistures and lower strengths than normal for the area. Data relative to topographic position, drainage, vegetation, land use, and landform were obtained from general descriptions of the sites included in the reports referenced in paragraph 3 and from generalized information included in the soil series descriptions.

Field-Trip Site Data

7. During the early wet-season months of 1951, WES field parties visited various sections of the country accumulating strength, moisture, density, mechanical analysis, and Atterberg limits data for approximately 100 soils. The sites selected for these tests were those believed to be potentially critical from the trafficability standpoint. Additional tests of the same type were made in early 1953 on soils of about 125 sites believed to be typical of large areas of the United States. These two sets of test data were important contributions to the original soil trafficability classification study (see 11th Supplement). The 1951 and 1953 site data and soil data for the 6- to 12-in. layer obtained at 206 sites in 22 states of the southern, central, eastern, and northwestern sections of the United States are included in table B2.

Soil data

8. An average CI value for the 6- to 12-in. soil layer for each of the sites visited in 1951 was obtained from CI readings at 6- and 12-in. depths at 10 different spots within the site; an average CI value for each of the sites visited in 1953 was obtained from CI readings at 6-, 9-, and

12-in. depths at four spots within the site. Two or more RI tests were run according to standard procedures and the values were averaged. Data from silty or clayey sand soils (SM, SC, SM-SC) of sites visited in 1951 are not included in the tables because the remolding test for fine-grained soils rather than the remolding test for coarse-grained soils with fines was used to determine the RI's. The latter test was not developed until 1953. The moisture-content and density values, respectively, of the 6- to 12-in. layer were averaged from values of measurements on usually two or occasionally three samples obtained with a trafficability sampler. One or more samples were obtained for Atterberg limits and mechanical analysis tests from which the USCS and many of the USDA soil types were determined. The USDA textural sizes were not measured for most of the 1951 field-trip sites. Identification of the 6- to 12-in. layer USDA soil type for these sites was based on the textural type of the series description, where it was actually noted (or there was reason to believe) that the type extended to a depth of at least 12 in.

9. Strength, moisture-content, and density data (not questionable), with corresponding RCI values, included in the table under "Wet-Season Condition" were used in the analysis for this condition. Data included in the analysis of high-moisture condition were selected from low-topography sites with high water tables or with field moisture contents close to or at an estimated maximum per cent saturation.

Site data

10. The classification of topographic position, slope, drainage, vegetation, land use, and landform of the site was based on general information obtained at the time of the test, or on generalized data contained in the soil series descriptions. The topography class, high or low, was estimated from the general site description, the topographic position and drainage characteristics of the site, and the proximity of the site to ponds, streams, or other surface water bodies.

11. These sites, as previously mentioned, were normally chosen for testing because of their critical trafficability conditions. The data for wet-season condition, therefore, are biased toward somewhat higher moistures and lower strengths than normal.

Prediction-Development Site Data

12. The field data were obtained from two major sources: the sites used by the Waterways Experiment Station and cooperating agencies (termed University sites) and the sites of the Vicksburg Research Center of the U. S. Forest Service and cooperating agencies (termed Extension sites). The Forest Service worked with the WES in establishing the sites for the primary purpose of studying the effects of meteorological factors on the soil-moisture regime. The preliminary objective of the study was to develop means for quantitatively predicting daily soil-moisture contents of the surface soil. The ultimate objective of the study program is to develop a system for predicting strength and consequently trafficability of the critical soil layer. The studies conducted thus far show, among other things, that the moisture contents of soils in humid, temperate climatic regions will attain maximum values (field-maximum) in the wet season and, as a result of low evapotranspiration loss, will maintain these values with relatively small deviations throughout the wet season.

13. The data shown in table B3 were collected in the wet-season months of 1951 through 1954 from 128 sites scattered in 23 states throughout the various physiographic and climatic provinces of the United States. Detailed tabulations of soil and site information, most of which is contained in table B3, and a complete discussion of the study program are included in a series of WES reports.[7a-7d*] The data from some of the sites were used in the development of the original soil classification scheme (11th Supplement).

Soil data

14. Data from the WES and University sites were collected from a 40-ft-square sampling area, divided into 25 approximately 8-ft-square plots. Samples or direct measurements of the soil on any one day were usually taken in four randomly selected plots. Data from the Vicksburg Research Center and Extension sites were obtained from a 6- by 12-ft test area, divided into 72 1-ft-square plots. Samples or direct measurements on any one day were usually taken in two randomly selected plots.

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* Raised numbers refer to similarly numbered references listed at end of main report.

15. Twelve CI spot measurements, three in each of the four selected 8-ft plots, or six spot measurements, three in each of the two selected 1-ft plots, were averaged for the 6- to 12-in. layer on any one day. The RI of the 6- to 12-in. layer on a given day was averaged from two tests performed in two of the four 8-ft plots or in each of the two 1-ft plots where CI's were measured. The RCI for a specific day was obtained in the usual manner. An attempt was made to obtain strength measurements concurrently with moisture measurements. CI and especially RI data, however, could not be obtained as frequently as moisture data, and at some sites could not be obtained at all during the wet-season period of study, due to the firmness of the soil, erratic penetration readings, or other test difficulties.

16. Moisture contents usually were measured daily or one to five times per week at most sites, and monthly at some of the sites, during a test period ranging from one to two years. Measurements were made by means of gravimetric or electrical-resistance methods. Four gravimetric samples of the 6- to 12-in. layer obtained with a trafficability sampler from each of four 8-ft plots, or eight samples, four from the 6- to 9-in. layer and four from the 9- to 12-in. layer, obtained with a modified King tube or Oakfield sampler from two spots in each of two 1-ft plots, were averaged at a site for a given day. The electrical-resistance technique for measuring moisture content was used at most Vicksburg Research Center and Extension sites. The procedures are briefly discussed in paragraph 9, Appendix A. Details of the units, their installation, and the problems involved in their calibration and use are discussed in several reports.[3,7c,11,12]

17. The number of tests, and the range and average values of moisture content, CI, RI, and RCI, respectively, for the wet season are included in the table for each site where such information was available. Only moisture-content and CI data obtained on the same day as RI data were averaged and used in the various analyses for wet-season condition.

18. The dry density of soils at the WES and University sites was often measured at the same time as, and from the same samples used in the measurement of moisture content. The density of soils from the Vicksburg Research Center and Extension sites usually was determined from two 2-in. cores taken with the San Dimas or drive-type sampler when the soil was

moist. Occasionally the dry density was determined from blocks of soil cut to a known volume. The average value included in the table for each site is the average of all of the 6- to 12-in. layer values measured in the various plots during the period of study.

19. The USDA and USCS soil types for each site were determined from mechanical analysis and Atterberg limits of usually one 6- to 12-in. layer soil sample; occasionally the type was based on an average of two values obtained from analysis of samples of the 6- to 9-in. and 9- to 12-in. soil layers. The sample for the 3- or 6-in. increment was a composite of two or more samples obtained from randomly selected plots. The 0- to 6-in. layer USDA type was in most cases identified from a textural analysis of the same number of samples as used in the identification of the 6- to 12-in. layer.

20. Organic contents were determined by means of the modified Walkey rapid dichromate oxidation method[4] at the Mississippi Agricultural Experiment Station. The loss-on-ignition method following modified procedures of the Association of Agricultural Chemists[2] was used for samples when the organic content was over 5% as determined by the Walkey method.

21. The 2-in.-diameter samples obtained with the San Dimas sampler and used for density determinations were also used to determine the moisture contents at 0.005- and 0.06-atmosphere tensions. The field-maximum and field-minimum moisture contents for each site were determined from a study of the site's complete soil-moisture record. The per cent saturations of nonorganic soils at field maximum were computed for sites of low topography using the average dry density value for the site.

22. A high-moisture condition was assumed to exist at a low-topography site on a given day if (a) the water table was within 4 ft of the surface for fine-grained soils or within 2 ft of the surface for coarse-grained soils with fines, or (b) if no water-table data were available, the per cent saturation of the soil at a moisture content of lowest RCI was slightly less than, equal to, or greater than the computed per cent saturation at the field-maximum moisture content. Moisture-content, per cent saturation, CI, RI, and RCI data for the day of lowest RCI at low-topography sites under high-moisture condition were tabulated and included in the analyses. Per cent saturation was computed using the moisture content and density (noted in the table under "High-Moisture Condition") that

were determined from the same sample or samples. Thus, the inherent variation of density and moisture from spot to spot and the interrelation of the two variables at each spot are considered, and the value of per cent saturation is valid. A per cent saturation based on a moisture content from one sample and a density value from another would not be valid.

Site data

23. The descriptions of topographic position, slope, surface and internal drainage, vegetation, land use, and landform, included in table B3, were transposed from data tables included in two previous WES reports.[7c,7d] The descriptions originally were based on detailed information obtained from observations in the field during the period of study. Sites with an original wetness index category[7c,7d] of 1 or 2 were classified as high topography and those with a wetness index of 3 or 4 were classified as low topography.

Survey Site Data

24. Data collected at the survey sites were used to check the accuracy of soil-moisture predictions that were based on tentative average soil-moisture relations developed from prediction-development site data. The field study was conducted from June 1954 to July 1955 by the Vicksburg Research Center, U. S. Forest Service, in four areas of the United States designated as the Southern, Northeast, Lake States, and Intermountain Regions.

25. The data used in the analyses are presented in table B4. The information generally was collected during the wet-season months of October 1954 through May 1955, the specific months varying with the particular region. A total of 618 sites located in 20 states were used: 178 sites in Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, and Tennessee of the Southern Region; 135 sites in Connecticut, Massachusetts, New Hampshire, New York, Pennsylvania, and Vermont of the Northeast Region; 161 sites in Illinois, Iowa, Minnesota, and Wisconsin of the Lake States Region; and 144 sites in Idaho, Nevada, and Utah of the Intermountain Region. A complete discussion of the test program and detailed tabulations of data for each test are contained in WES TM 3-331, Report No. 5.[7e]

26. Sites were established on major soil groups located within 5 miles of a regular weather station and were tentatively selected on the basis of state soil-association maps or county soil-survey maps, and detailed highway maps. Each site of about one-tenth acre in size was located within 100 yd of an accessible road, was uniform with respect to soil and cover conditions, and was not in cultivation at the time of selection.

Soil data

27. Each site was divided into three plots for sampling purposes. Samples for moisture-content determinations normally were taken at 6-in. increments at three randomly selected points, one within each plot. The samples for each layer were composited to provide one sample and, thus, one moisture value for a specific day. At least eight visits, at about monthly intervals, were made to the site. The wet-season average moisture content for each site, included in table B4, is one, or an average of two or three 6- to 12-in. layer values obtained only on days in the wet season when RI tests were run.

28. On all test visits six CI readings were taken at two points (1 ft apart, at each of the three moisture sampling locations) and averaged for a particular layer. In coarse-textured and stony soils, an "airfield" penetrometer with a 0.2-sq-in. cone was used when the regular instrument with a 0.5-sq-in. cone would not penetrate the soil. The wet-season average CI data in the table is a single value or an average of all 6- to 12-in. layer CI measurements taken on the same days as wet-season RI tests. Remolding tests were attempted on at least two visits to the site, usually when the soil was wet. However, the firmness or stoniness of the soil often prevented sampling or resulted in nonvalid measurements. Thus, RI data are not shown for some of the sites. At sites for which data are shown, two tests on a given day were run at points between plots and averaged. The average RI value for the wet season is one, or an average of two or three, of the average daily values determined during test visits in the wet season. The wet-season average RCI is the average of all RCI values computed for days in the wet season. Wet-season average moisture-content and CI values for a site were not included in the tables if no data were obtained for remolding and rating cone indexes.

29. Bulk samples of 6-in. layers were taken at six locations, two in

each plot, and composited to provide one sample for mechanical analysis, Atterberg limits, and organic-content determinations. The liquid limits of nonplastic soils and a few soils with low plasticity could not be determined by the standard procedure, and consequently a modified procedure was used to determine liquid limits of these materials.[9] Organic-matter determinations were made using the modified Walkey rapid dichromate oxidation test. The texture, plasticity, and organic-content values of the 6- to 12-in. layer, and the USDA and USCS soil types based on these values are presented in the table for each site.

30. Measurements of density and of moisture content at 0- and 0.06-atmosphere tension were made on 2-in.-diameter cores obtained with the modified San Dimas or drive-type sampler when the soil was moist. The data presented in the table are an average of four values obtained from cores of the 6- to 9-in. and 9- to 12-in. layers taken at two central points between plots.

31. Questionable values in table B4 are indicated by an asterisk and were not used in the analyses. Moisture contents at 0-atmosphere tension were questioned if the value was appreciably less than the wet-season average field moisture content or if the value was consistently less than the wet-season moisture values for specific days. Per cent saturation values at 0-tension moistures are indicated by an asterisk if the moisture content or density was questioned or if the value was appreciably greater than 100% saturation (generally greater than 110%). Values of saturation slightly greater than 100% (generally between 100 to 110%) are not indicated by an asterisk even though such values are theoretically impossible. The slight excess over 100% is considered inconsequential for analysis purposes. The excess may be attributed to the inadequacy of the assigned average specific gravity or to minor instrumental or human error in deriving moisture-content or dry density values used in the computation. Per cent saturation values at 0-tension moistures are not presented for sites of the Northeast Region. Computed values for this region were in most cases greater than 100%, thus suggesting that the average specific gravity should be higher than the value used, or that a consistent error in sampling or in measuring provided density or moisture values that were consistently too high.

32. A high-moisture condition was assumed to exist at a

low-topography site for a particular day if (a) the water table was within 4 ft of the surface for fine-grained soils or 2 ft for coarse-grained soils with fines, or (b) where water-table data were not available, the field moisture content was not more than 1% less than the 0-tension moisture content. The data included in the table are for the day of lowest RCI under high-moisture condition. In a few cases data were presented for this condition even though the data did not meet the criteria specified above; however, the RCI for the day was lower than that for another day under high-moisture condition. It should be pointed out that the moisture content for this condition is not necessarily the highest value obtained at the site.

Site data

33. Site environmental data presented in table B4 include the classification or description of topographic position, slope, surface and internal drainage, vegetation, land use, and landform. This information was obtained from the tables of WES TM 3-331, Report No. 5,[7e] and was originally derived from direct observations at the site during the period of testing.

34. Soil series were identified by regional soil correlators or surveyors of the Soil Conservation Service, or the names were derived from county soil maps or farm plan maps supplied by the Soil Conservation Service.

35. The moisture conditions of the site were originally classified as wetness index 1, 2, 3, or 4, based on the minimum water-table depth and moisture penetration conditions as determined from the climate, topographic position, drainage characteristics, and, where available, measured depths to the water table. For purposes of this study, sites with a wetness index of 1 or 2 were classified as high topography and those with a wetness index of 3 or 4 were classified as low topography.

Airphoto-Trafficability Site Data

36. These data were collected from sites established during the period 1950 through 1958 by the Engineering Experiment Station, Purdue Uni rsity, under contract to the Waterways Experiment Station. The information was used in a study to develop criteria for defining the

trafficability characteristics of major landform environments from aerial photographs based on existing airphoto interpretation techniques.

37. The data, presented in table B5, were collected in the wet season from 262 sites located in 29 states. A detailed presentation of the trafficability data and characteristic airphoto patterns for the various landform-parent material combinations are contained in eight photo key reference books.[5] A condensation of the information and an analysis of the data based on landform-soil type associations are included in a summary report (not yet published).

Soil data

38. The CI, RI, and RCI data presented in table B5 are average values for the 6- to 12-in. layer obtained on a specific day in the wet season. CI values were not included in the table for sites where the soil was too firm to obtain a sample for an RI test.

39. The moisture content and dry density were measured to the closest one-tenth unit from one sample of the 6- to 12-in. layer obtained with the Hvorslev trafficability sampler. Most of the early basic field information, however, was lost. The moisture and density data presented in the table for most of the sites, therefore, are values interpolated to the closest unit from graphs of data contained in the reference books. The computed per cent saturation may vary to some extent (generally within a $\pm$5% range) from its true value due to the approximation of the moisture-content and density values used in the computation.

40. Soils were sampled for Atterberg limits and textural determinations by horizons within the soil profile. The values for each of the horizons within the 6- to 12-in. layer were proportioned according to its relative thickness in the layer to provide the data included in the table. The textural data were based on either a sieve (No. 200) analysis of soils visually classified as coarse grained, or on a hydrometer analysis of soils visually classified as fine grained. At sites where the per cent fines (minus No. 200 sieve sizes) was not determined, the distinction between a coarse- and fine-grained USCS soil type was based, with a fair degree of reliability, upon an interpolated 0.074-mm value obtained from the hydrometer analysis curve. The USDA type, of course, could not be ascertained for sites for which sand, silt, and clay percentages were not known.

41. Sites classified as low topography with soil estimated to be at high-moisture condition for the particular day the data were taken are noted by an X mark in the table. A high-moisture condition was assumed if the per cent saturation was greater than minus one standard deviation from the mean for the soil type or if, at sites with questionable or no values of per cent saturation, the RCI was low and the detailed description of the site suggested a very wet soil at the time of testing.

Site data

42. The classification of topographic position and landform was based on relatively detailed descriptions obtained when the site was visited and included in the reference reports. The surface and internal drainage characteristics were based on information contained in the soil series descriptions. The description of vegetation and classification of land use were interpreted from aerial or ground photographs or from descriptions of the site. A dashed line for a particular factor in the table indicates that the factor classification or description could not be ascertained.

43. The topography classification of the site was based on the topographic position, external and internal drainage characteristics, and detailed site description information contained in the reference report.

44. The soil series or series association (composed of two or three soil series) represents the best available information obtained from Soil Conservation Service soil maps in existence at the time of the test.

High-Water-Table Site Data

45. The high-water-table sites were established in 1957 by the Vicksburg Research Center, U. S. Forest Service, in cooperation with the Waterways Experiment Station for the purpose of obtaining information on the various soil variables, especially strength, under conditions of maximum wetting. Fifty-eight sites with water tables within 6 in. of the surface and two sites with water tables at a depth of 8 in., located in several counties of central Mississippi and one parish of Louisiana, were studied.[10]

46. The high-water-table site data used in this report are presented

in table B6. Since the data are obviously not typical of average soil strengths and moisture contents in the wet season, i.e. wet-season condition, they were used only in the analysis of soils under high-moisture condition.

Soil data

47. Sites often were established in the same general area within short distances of each other. If all the sites were included in the analysis the uniform soils of areas with several sites would be excessively weighted. In order to eliminate this regional bias, sites located in the same area with the same soil series and USDA-USCS type were grouped together in the table and only the site with the lowest RCI, indicated by an X mark in the table, was used in the analysis.

48. The CI and RI data are average values obtained on the day of the test visit. The RCI is the product of the CI and RI.

49. The dry density and field moisture content, respectively, were averaged from measurements on 6- to 9-in. and 9- to 12-in. layer cores obtained with a modified San Dimas sampler. The 0- and 0.06-tension moisture values were derived in the laboratory from measurements of the same cores of soil. Per cent saturations were computed for 0-tension and field moisture contents, respectively.

50. The Atterberg limits and per cent of each texture, from which the USDA and USCS soil types were determined, were derived from a mechanical analysis of a 6- to 12-in. layer soil sample.

Site data

51. Site environmental data were omitted from table B6 because the information available was not sufficient to classify each of the factors properly. Since the water tables at all sites were within 4 ft of the surface, all sites classified as low topography. The soil series information was obtained from county soil maps of the area.

Table B1

Traffic Test Data

Site No.	Test No.	Location State	Location County	USDA Soil Map Identification Soil Series	0- to 6-in. USDA Type	Topography Class	Soil Data, 6- to 12-in. Layer, Wet-Season Condition: No. of Tests	USDA Texture by Wt, % Type	Sand	Silt	Clay	USCS % Fines	Atterberg Limits LL	PL	PI	Type	No. of Tests	Average Dry Density lb/cu ft	MC %	CI	RI	MCI	Range Dry Density lb/cu ft	Range MC, %	
Ft. Benning	-1 2,5	Ala.	Russell	---	----	Low	2	L	34	44	22	68	32	20	12	CL	2	97.8	23.0	116	0.50	61	95.1-100.5	21.8-24.2	6
	-2 3,4	Ala.	Russell	---	----	Low	2	SiL	30	54	16	72	32	19	13	CL	2	97.7	25.4	121	0.52	57	95.1-100.3	25.0-25.8	7
	-3 6,11,17-23, 27-29,31-36, 38, Well 1 (10)	Ala.	Russell	---	----	Low	3	LS	79	17	4	23	14	13	1	SM	27	107.0	15.2	190	0.50	97	101.2-113.2	10.0-19.1	15
	-4 14,24,30,37	Ala.	Russell	---	----	Low	1	SL	73	17	10	28	20	11	9	SC	3	115.8	9.4	217	1.25	259+	107.2-122.2	8.6-10.7	20
	-5 16	Ala.	Russell	---	----	Low	1	SCL	68	11	21	34	29	14	15	SC	1	112.3	14.5	229	0.65	145	112.3	14.5	
	-6 13, Well 3 (9)	Ala.	Russell	---	----	Low	1	SL	73	15	12	28	16	12	4	SM-SC	9	111.6	12.0	207	1.44	179	105.1-117.6	9.6-16.2	15
	-7 25	Ala.	Russell	---	----	Low	1	S	88	12	0	13	--	--	NP	SM	1	104.8	7.3	227+	1.66	300+	104.8	7.3	
Lafayette	-1 1-8,10-11	Ind.	Tippecanoe	---	----	Low	10	SiL	14	69	17	95	39	20	19	CL	10	96.0	26.8	127	0.59	76	88.3-100.6	23.1-29.5	10
	-2 9	Ind.	Tippecanoe	---	----	Low	1	----	--	--	--	92	75	25	50	CH	1	---	36.3	113	0.71	80	---	36.3	
	-3 12-16	Ind.	Tippecanoe	---	----	Low	5	----	--	--	--	99	121	70	51	OH	5	56.9	101.3	95	0.61	60	33.7-97.4	28.8-183.2	7
Ft. Knox	-1 1-5,7-10, 16-23,26-27	Ky.	Hardin	---	----	Low	14	SiL	17	68	15	87	34	22	12	CL	18	94.5	26.9	145	0.43	50	87.4-100.9	21.2-33.5	6
	-2 13-14	Ky.	Hardin	---	----	Low	1	SiL	15	79	6	88	32	20	12	CL	2	96.6	25.0	112	0.44	54	94.9-98.9	25.0	12
	-3 24-25	Ky.	Hardin	---	----	Low	1	SiL	7	78	15	96	27	22	5	CL-ML	2	88.7	28.6	188	0.46	75+	88.7	28.6	187
	-4 6	Ky.	Hardin	---	----	Low	1	SiL	13	67	20	91	63	29	34	CH	1	---	40.4	155	0.85	132	---	40.4	
	-5 11-12	Ky.	Hardin	---	----	Low	1	SiCL	8	52	40	93	63	27	36	CH	2	---	33.6	157	0.75	116	---	26.9-40.4	14
Laurel	-1-1 22-23	Miss.	Clarke	Pachuta	CL	Low	1	SiC	14	41	45	87	75	25	50	CH	4	84.9	33.1	96	1.22	117	79.2-91.5	26.1-37.0	8
	-2-1 16-17	Miss.	Jones	Stough	SiL	Low	1	SiL	20	58	22	87	25	13	12	CL	2	103.8	19.0	156+	0.39	---	103.2-104.4	19.0-19.1	
	-2-2 18-19,37-38	Miss.	Jones	Kalmia	SiL	Low	1	SiL	28	61	11	83	21	17	4	CL-ML	3	91.0	27.5	85	-----	---	83.9-96.9	22.1-32.7	5
	-2-3 39	Miss.	Jones	Myatt	SiL	Low	1	L	49	44	7	66	15	--	NP	ML	1	97.3	22.3	95	0.44	42	97.3	22.3	
	-2-4 40	Miss.	Jones	Myatt	SiL	Low	1	SiL	17	76	7	89	20	19	1	ML	1	91.8	25.6	102	0.21	21	91.8	25.6	
	-3-1 8-13	Miss.	Jones	Sawyer	SiL	Low	2	SiL	35	51	14	70	19	15	4	CL-ML	6	95.0	22.1	83	0.49	45	90.7-99.0	16.7-27.0	6
	-4-1 2-3,6-7	Miss.	Jones	Boswell	SiL	Low	2	SiL	19	63	17	84	24	18	6	CL-ML	4	95.8	25.0	78	0.46	36	95.2-97.0	24.4-25.7	7
	-4-2 4	Miss.	Jones	Boswell	----	Low	1	L	40	46	14	70	19	17	2	ML	1	96.6	24.6	74	0.50	37	96.6	24.6	
	-4-3 5	Miss.	Jones	Boswell	----	Low	1	SiL	19	61	20	86	28	17	11	CL	1	94.4	26.1	56	0.66	37	94.4	26.1	
	-4-4 34-36	Miss.	Jones	Boswell	L	Low	3	L	36	45	19	76	31	18	13	CL	3	97.3	24.7	80	0.76	65	92.9-100.5	23.6-26.8	59
	-5-1 24-26,42-43	Miss.	Smith	Ochlockonee	L	Low	4	L	40	40	20	72	27	16	11	CL	5	97.4	23.9	104	0.72	75	96.6-100.9	18.9-28.7	82
	-5-2 44	Miss.	Smith	Ochlockonee	L	Low	1	L	47	40	13	60	20	16	4	CL-ML	1	94.6	32.4	68	0.54	37	94.6	32.4	
	-5-3 27-28,41	Miss.	Smith	Ochlockonee	SiL	Low	3	SiL	42	23	25	53	31	15	16	CL	3	95.0	23.8	84	0.60	52	93.4-96.4	22.6-24.6	70
Clinton	-1 1, 2	Miss.	Hinds	---	----	Low	2	----	--	--	--	97	35	20	15	CL	2	94.7	26.7	142	0.59	82	94.5-94.9	26.0-27.4	134
	-2 3	Miss.	Hinds	---	----	Low	1	----	--	--	--	96	31	20	11	CL	1	94.7	25.8	96	0.21	20	94.7	25.8	
Twin Mt.	-1 4-5	N. H.	Coos	---	----	Low	3	----	--	--	--	73	38	--	NP	ML	3	68.7	47.2	146	0.22	33	65.2-73.7	42.0-52.1	133
	-2 6,8	N. H.	Coos	---	----	Low	2	----	--	--	--	60	47	--	NP	ML	2	65.3	53.0	96	0.24	22	63.7-67.0	51.4-54.6	82
Concord	-1 1-3	N. H.	Merrimac	Tilton	SL**	Low	1	----	--	--	--	73	40	--	NP	ML	3	69.5	50.3	146	0.28	42	63.0-76.7	41.6-58.5	136
Helena	-1 M 2	N. Y.	St. Lawrence	Vergennes	SL**	Low	1	----	--	--	--	87	71	29	42	CH	1	61.2	49.2	98	1.36	133	61.2	49.2	
Ft. Bragg	-1 2-4	N. C.	Cumberland	---	----	Low	3	SL	74	21	5	35	--	--	NP	SM	3	----	14.6	116	0.36	43	---	13.1-15.6	107
Cambridge	-1 V 3	Vt.	Franklin	---	----	Low	1	----	--	--	--	60	21	--	NP	ML	1	91.4	29.8	138	0.35	48	90.9	29.8	13

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* Questionable value, not used in analysis.
** Identified from USDA Soil Map.

Table B1

Traffic Test Data

Soil Data, 6- to 12-in. Layer																						
Wet-Season Condition											High-Moisture Condition											
Average						Range					At Lowest RCI							Site Environmental Data				
No. of Tests	Dry Density lb/cu ft	MC %	CI	RI	RCI	Dry Density lb/cu ft	MC, %	CI	RI	RCI	Test No.	Depth to Water Table, in.	Dry Density lb/cu ft	MC %	% Sat.	CI	RI	Lowest RCI	Topographic Position	Drainage Surface	Drainage Internal	Vegetation	Land Use	Eng. Conf. Land Form
2	97.8	23.0	116	0.50	61	95.1-100.5	21.8-24.2	63-170	0.47-0.54	30-92	5	0-6	100.5	21.8	90	63	0.47	30	Terrace flat	---	---	Herbaceous	Undisturbed	IIE4
2	97.7	25.4	121	0.52	57	95.1-100.3	25.0-25.8	77-165+	0.38-0.66	51-63	4	6-10	100.3	25.8	106	77	0.66	51	Terrace flat	---	---	Herbaceous	Undisturbed	IIE4
27	107.0	15.2	190	0.50	97	101.2-113.2	10.0-19.1	155-266	0.21-1.39	36-300+	Well 1 (3/13)	12	105.0	19.1	88	173	0.21	36	Terrace flat	---	---	Herbaceous	Undisturbed	IIE4
3	115.8	9.4	217	1.25	259+	107.2-122.2	8.6-10.7	208-231	0.85-1.54	177-300+	--	---	---	--	--	---	--	--	Terrace flat	---	---	Herbaceous	Undisturbed	IIE4
1	112.3	14.5	229	0.65	149	112.3	14.5	229	0.65	149	--	---	---	--	--	---	--	--	Terrace flat	---	---	Herbaceous	---	IIE4
9	111.6	12.0	207	1.44	179	105.1-117.6	9.6-16.2	151-228	0.36-3.72	54-300+	--	---	---	--	--	---	--	--	Terrace flat	---	---	Herbaceous	---	IIE4
1	104.8	7.3	227+	1.66	300+	104.8	7.3	227+	1.66	300+	--	---	---	--	--	---	--	--	Terrace flat	---	---	Herbaceous	---	IIE4
10	96.0	26.8	127	0.59	76	88.3-100.6	23.1-29.5	101-160	0.31-0.79	31-111	5	---	100.6	23.1	95	101	0.31	31	---	---	---	---	---	--
1	---	36.3	113	0.71	80	---	36.3	113	0.71	80	--	---	---	--	--	---	--	--	---	---	---	---	---	--
5	56.9	131.3	95	0.61	60	33.7-97.4	28.8-183.2	72-110	0.37-0.73	27-80	16	---	---	183.2	--	72	0.37	27	---	---	---	---	---	--
18	94.5	26.9	115	0.43	50	87.4-100.9	21.2-33.5	66-153	0.22-0.64	23-95	22	<48	87.4	29.7	88	104	0.22	23	Bottomland depression	---	Poor	Herbaceous	Undisturbed	--
2	96.6	25.0	112	0.44	54	94.9-98.9	25.0	122-123	0.40-0.48	49-59	14	<48	94.9	23.3*	--	122	0.40	49	Terrace flat	---	---	Herbaceous	Undisturbed	--
2	88.7	28.6	188	0.40	75+	88.7	28.6	187+-190+	0.40	75+-76+	24	<48	88.7	28.6	88	187	0.40	75	Bottomland depression	---	Poor	Herbaceous	Undisturbed	--
1	---	40.4	155	0.85	132	---	40.4	155	0.85	132	6	<12	---	40.4	--	155	0.85	132	Terrace flat	---	---	Herbaceous	Undisturbed	--
2	---	33.6	137	0.75	116	---	26.9-40.4	140-174	0.65-0.85	113-119	11	<12	---	26.9	--	174	0.65	113	Terrace flat	---	---	Bare	Undisturbed	--
4	84.9	33.2	96	1.22	117	79.2-91.5	26.1-37.0	85-109	0.99-1.76	84-176	22	---	91.5	26.1	84	85	0.99	84	---	Poor	Poor	Herbaceous with trees	Undisturbed	--
2	113.8	19.0	150+	0.39	---	103.2-124.4	19.0-19.1	150+	0.15-0.63	---	--	---	---	--	--	---	--	--	Terrace flat	Medium	Medium	Herbaceous with trees	Undisturbed	IIC1
3	91.0	27.5	95	----	---	83.9-96.9	22.1-32.7	54-132+	---	---	--	---	---	--	--	---	--	--	Terrace flat	Med-poor	Medium	Herbaceous with trees	Undisturbed	IIC1
1	97.3	22.3	95	0.44	42	97.3	22.3	95	0.44	42	9	---	97.3	22.3	84	95	0.44	42	Terrace flat	Poor	Poor	Herbaceous with trees	Undisturbed	IIC1
1	91.8	25.6	132	0.21	21	91.8	25.6	132	0.21	21	40	---	91.8	25.6	85	132	0.21	21	Terrace flat	Poor	Poor	---	---	IIC1
6	95.0	28.2	83	0.49	40	90.7-99.0	16.7-27.0	60-104	0.24-0.73	19-55	13	---	90.8	27.0	87	78	0.24	19	---	Poor-med	Poor	---	---	IIC1 or VF
4	95.8	25.0	78	0.46	36	95.2-97.0	24.4-25.7	79-84	0.41-0.50	34-39	6	---	95.6	24.4	89	82	0.41	34	Upland flat	Good	Poor	---	---	--
1	96.6	24.6	74	0.50	37	96.6	24.6	74	0.50	37	4	---	96.6	24.6	92	74	0.50	37	Upland flat	Good	Poor	---	---	--
1	94.4	26.1	56	0.66	37	94.4	26.1	56	0.66	37	5	---	94.4	26.1	92	56	0.66	37	Upland flat	Good	Poor	---	---	--
3	97.3	24.7	80	0.76	65	92.9-100.5	23.6-26.8	59-98	0.51-1.10	30-108	36	---	92.9	26.8	91	59	0.51	30	Upland flat	Good	Poor	---	---	--
5	97.4	23.9	104	0.71	75	90.6-100.9	18.9-28.7	82-152	0.53-0.78	43-115+	26	---	96.6	24.2	96	82	0.53	43	Terrace flat	Poor	Medium	---	---	IIC1
1	84.6	32.4	68	0.54	37	84.6	32.4	68	0.54	37	44	---	84.6	32.4	92	68	0.54	37	Terrace flat	Poor	Medium	---	---	IIC1
3	95.0	23.8	54	0.60	52	93.4-96.4	22.6-24.6	70-103	0.48-0.75	34-77	27	---	95.2	24.6	89	70	0.48	34	Terrace flat	Poor	Medium	---	---	IIC1
2	94.7	26.7	142	0.59	82	94.5-94.9	26.0-27.4	134-150	0.44-0.74	66-99	1	---	94.9	26.0	93	150	0.44	66	---	---	---	---	---	--
1	94.7	25.8	96	0.21	20	94.7	25.8	96	0.21	20	J 3	---	94.7	25.8	92	96	0.21	20	---	---	---	---	---	--
3	68.7	47.2	146	0.22	33	65.2-73.7	42.0-52.1	133-157	0.18-0.24	24-38	3	---	65.2	52.1	86	133	0.18	24	---	---	---	---	---	--
2	65.3	53.1	96	0.24	12	63.7-67.0	51.4-54.8	82-111	0.08-0.20	9-16	8	---	67.0	54.8	77	111	0.08	9	---	---	---	---	---	--
3	69.5	51.3	148	0.28	42	63.9-76.7	41.6-56.5	136-158	0.19-0.44	28-68	1	<28	63.9	56.5	98	158	0.19	28	---	Medium	Good	Herbaceous	Undisturbed	--
1	62.2	49.2	95	1.30	133	62.2	49.2	95	1.30	133	--	---	---	--	--	---	--	--	---	---	---	---	---	--
3	----	44.7	116	0.56	43	---	43.1-45.6	107-123	0.23-0.74	19-41	2	---	---	45.1	--	114	0.23	19	---	---	---	---	---	--
1	71.1	24.3	159	0.53	48	71.1	24.3	138	0.53	48	V 3	---	71.1	24.3	81	138	0.53	48	---	---	---	---	---	--

Table B2

Field Trip Site Data, 1951 and 1953

Site No.		Location State	County or Parish	USDA Soil Map Identification Soil Series	Type	Topography Class	Soil Data, 6- to 12-in. Layer: USDA Type	USDA Texture by Wt, % Sand	Silt	Clay	USCS % Fines	USCS Atterberg Limits LL	PL	PI	USCS Type	Wet-Season Condition: Dry Density lb/cu ft	MC %	% Sat.	Depth to Water Table in.	CI	RI	RCI	Low-Topography Site at High-Moisture Condition	Topographic Position
Ala.	2	Ala.	Jefferson	Wabash	SiCL	Low	----	--	--	--	86	69	31	38	CH	54.2	48.4	62	---	153	0.75	115	-	Bottomland flat
	3		Jefferson	Hagerstown	L	High	----	--	--	--	66	22	15	7	CL-ML	105.3	17.6	82	---	103	0.56	58	-	Lower slope
	4		Jefferson	Huntington	SiL	Low	L	40	41	19	76	24	19	5	CL-ML	91.8	24.9	82	---	111	0.39	43	X	Bottomland flat
	12		Dekalb	Unclassified	----	High	----	--	--	--	85	27	19	8	CL	89.5	27.8	87	---	89	0.51	45	-	Upland ridge
Ga.	9	Ga.	Floyd	Dekalb	SL	Low	----	--	--	--	82	27	20	7	CL-ML	98.0	23.3	90	---	120	0.38	46	X	---
	10		Floyd	Shackelton	SiL	Low	SiCL	--	--	--	93	30	21	9	CL	82.5	35.9	94	---	100	0.39	39	X	---
	11		Floyd	Colbert	SiL	Low	----	--	--	--	93	38	27	11	ML	83.2	34.5	93	---	59	0.51	30	X	---
Ill.	13	Ill.	Knox	Unclassified	----	High	----	--	--	--	100	42	19	23	CL	---	24.6	---	---	135	1.01	136	-	---
	14		Tazewell	Unclassified	----	Low	----	--	--	--	80	30	17	13	CL	99.2	24.7	98	---	74	0.69	51	X	Bottomland flat
	15		Tazewell	Clinton	----	Low	----	--	--	--	96	33	21	12	CL	---	27.2	---	---	262	1.40	300+	-	Bottomland flat
	18		Iroquois	Unclassified	----	Low	----	--	--	--	63	28	15	13	CL	90.9	29.0	94	---	75	0.48	36	X	---
Ind.	20	Ind.	Wells	Fox	L	Low	L	--	--	--	51	23	17	6	CL-ML	103.9	19.6	88	---	156	0.35	55	X	Bottomland flat
	21		Wells	Genesee	SiL	Low	SiL	--	--	--	64	36	21	15	CL	93.7	25.3	90	---	115	0.66	76	X	---
	22		Wells	Genesee	SiL	Low	SiL	--	--	--	75	42	23	19	CL	92.4	27.5	92	---	144	0.88	127	X	---
La.	2	La.	Jefferson	Iberia	SiL	Low	SiL	25	63	12	92	41	24	17	CL	83.8	34.8	95	---	153	0.55	84	X	---
	3		Richland	Oliver	SiL	Low	SiL	--	--	--	99	30	23	7	ML	93.8	28.0	97	---	180	0.48	86	X	---
	4		Iberia	Unclassified	Pt	Low	SiC	10	47	43	98	49	27	22	CL	74.6	42.8	94	<12	103	0.62	64	X	Bottomland depression
	5		Iberia	Unclassified	Pt	Low	----	--	--	--	97	49	25	24	CL	85.0	37.6	106	<12	60	0.61	37	X	Bottomland depression
	8		Lafayette	Crowley	SiL	Low	SiL	--	--	--	98	35	26	9	ML	74.9	37.7	83	---	112	0.40	45	X	Bottomland flat
	9		Acadia	Acadia	SiL	Low	SiL	--	--	--	94	29	22	7	CL-ML	91.4	31.7	104	---	44	0.52	23	X	Bottomland flat
	10		Acadia	Lake Charles .	SL	Low	SiL	25	62	13	91	26	22	4	ML	86.5	27.7	80	---	96	0.13	12	X	Bottomland flat
Mo.	1	Mo.	Laclede	Clarksville stony	L	High	SiL	27	61	12	78	21	17	4	CL-ML	96.4	22.1	81	---	133	0.41	54	-	---
	2		Laclede	Lebanon	SiL	Low	SiL	--	--	--	94	38	20	18	CL	93.6	27.6	95	---	136	0.47	64	X	Upper slope
	3		Laclede	Osage	SiCL	Low	SiL	7	76	17	97	36	20	16	CL	88.9	30.1	93	---	88	0.65	57	X	Bottomland flat
	4		Vernon	Unclassified	----	Low	----	--	--	--	85	39	19	20	CL	93.1	26.8	92	---	101	0.41	41	X	---
	5		Vernon	Unclassified	----	Low	----	--	--	--	56	18	--	NP	ML	96.6	22.4	83	---	194	0.40	78	-	Bottomland flat
	6		Vernon	Unclassified	----	High	----	--	--	--	93	32	20	12	CL	---	34.4	---	---	167	1.05	175	-	---
	7		Bates	Oswego	SiL	Low	SiL	--	--	--	93	30	20	10	CL	90.8	28.6	92	---	82	0.44	36	X	---
	8		Bates	Osage	SiL	Low	SiL	--	--	--	88	35	21	14	CL	86.5	30.7	89	---	56	0.61	34	X	Bottomland flat
	10		Ray	Cass	L	High	----	--	--	--	65	26	17	9	CL	98.7	20.7	81	---	187	1.47	275	-	---
	11		Carroll	Buckner	L	High	----	--	--	--	97	43	22	21	CL	---	28.8	---	---	140	1.10	154	-	---
N. H.	23	N. H.	Merrimac	Unclassified	----	Low	----	--	--	--	35	29	24	5	ML	85.8	32.7	93	---	150	0.21	31	X	---
N. Y.	26	N. Y.	Rensselaer	Hudson	SiL	Low	SiL	--	--	--	94	27	19	8	CL	104.3	21.9	99	---	174	0.56	97	X	---
	27		Rensselaer	Orono	SiL	Low	SiL	--	--	--	68	41	26	15	OL	89.3	31.6	---	---	119	0.73	87	-	Upland flat
	28		Rensselaer	Orono	SiL	Low	SiL	--	--	--	87	32	19	13	CL	95.5	27.6	100	---	104	0.60	62	X	Upland flat
	29		Rensselaer	Eel	SiL	Low	----	--	--	--	94	25	19	6	CL-ML	98.8	24.2	82	---	100	0.61	61	X	Bottomland flat
	30		Rensselaer	Podunk	SiL	Low	----	--	--	--	86	38	24	14	CL	89.8	31.0	98	---	81	0.55	45	X	Bottomland flat
	31		Delaware	Tioga	SiL	Low	----	--	--	--	87	38	27	11	ML	89.3	33.6	84	---	116	0.62	72	-	Bottomland flat
	32		Delaware	Barbour	SiL	Low	----	--	--	--	85	38	27	11	ML	72.6	38.8	81	---	105	0.62	65	X	---
Ore.	1	Ore	Multnomah	Saubre	SiCL	Low	SiCL	--	--	--	92	60	32	28	OH	---	33.5	---	---	227	0.84	191	-	Bottomland depression
	2		Multnomah	Hillsboro	L	High	L	--	--	--	88	27	--	NP	ML	77.9	33.8	80	---	309+	0.54	162+	-	Terrace flat
	5		Umatilla	Palouse	SiL	Low	SiL	--	--	--	96	36	21	15	CL	93.2	27.1	93	---	113	0.55	62	X	---
	11		Klamath	Yakima	----	Low	----	--	--	--	86	54	62	22	OH	42.7	91.7	---	---	153	0.22	34	X	Terrace flat
	12		Klamath	Yakima	CL	Low	----	--	--	--	71	32	17	11	CL	79.3	34.5	84	- -	70	0.56	39	X	Terrace flat
	13		Jackson	Medford	CL	Low	----	--	--	--	62	37	16	21	CL	103.9	21.7	92	---	159	0.80	127	X	Bottomland flat
	15		Lane	Chenalis	SiCL	Low	----	--	--	--	58	34	23	11	CL	92.7	25.6	86	---	192	0.74	142	-	---
	16		Lane	Veneta	CL	Low	CL	--	--	--	69	37	26	11	ML	83.1	35.1	94	---	109	0.34	37	X	---
	17		Lane	Willamette	SiCL	Low	----	--	--	--	99	62	30	32	CH	81.0	35.2	88	---	178	0.76	135	-	---
	18		Polk	Melbourne	CL	Low	SiCL	18	52	30	92	37	23	14	CL	87.5	31.8	95	---	159	0.64	102	X	Upland flat
	19		Polk	Melbourne	SiCL	High	SiCL	--	--	--	96	40	24	16	CL	91.6	27.2	79	---	195	0.83	162	-	Upland ridge
	20		Polk	Dayton	SiL	Low	SiL	--	--	--	84	43	20	23	CL	86.4	28.5	91	---	111	0.43	48	X	---
	21		Polk	Amity	SiCL	Low	SiL	19	63	22	91	34	22	12	CL	94.8	26.6	95	---	150	0.77	115	-	---
	22		Polk	Aiken	SiCL	Low	SiCL	--	--	--	86	44	26	18	CL	91.9	30.7	95	---	130	0.54	70	-	Lower slope
	23		Yamhill	Willamette	SiL	High	SiL	--	--	--	95	27	18	9	CL	102.3	20.1	97	---	201	0.66	133	-	Upland ridge
	24		Yamhill	Aiken	CL	High	----	--	--	--	86	37	22	15	CL	---	25.4	---	---	249	1.10	274	-	Upper slope
	25		Yamhill	Carlton	SiCL	High	----	--	--	--	86	44	30	14	ML	---	30.5	---	---	244	1.23	300	-	Lower slope
	26		Yamhill	Melbourne	L	High	----	--	--	--	97	33	22	11	CL	89.4	26.9	83	---	212	0.78	165	-	Upper slope
Tenn.	14	Tenn.	Bradley	Commagre	SiCL	Low	----	--	--	--	86	32	18	14	CL	100.7	20.7	85	---	81	0.55	45	X	---
	16		Meigs	Whynestone	SiL	Low	----	--	--	--	90	28	21	7	CL-ML	93.1	26.0	89	---	173	0.42	73	X	---
	17		Coffee	Clarksville	SiL	Low	SiL	--	--	--	93	28	21	7	CL-ML	94.0	26.7	93	---	150	0.25	37	X	Bottomland flat
	18		Coffee	Guthrie	SiL	Low	SiL	--	--	--	79	24	18	6	CL-ML	98.3	23.5	91	---	95	0.50	47	X	---
	19		Coffee	Hillsboro	SiL	High	SiL	--	--	--	81	24	19	5	CL-ML	93.5	22.5	77	---	142	0.59	84	-	--
	23		Bedford	Cumberland	SiL	Low	----	--	--	--	91	37	26	11	ML	91.4	27.5	90	---	100	0.62	62	X	Bottomland flat
	24		Bedford	Linkside	SiL	Low	SiL	--	--	--	74	41	21	20	CL	---	19.9	---	---	184	0.66	120	-	Bottomland flat
	26		Bedford	Coulwood	SiL	Low	SiL	--	--	--	88	36	20	16	CL	94.3	25.6	96	---	111	0.62	69	X	---
	27		Bedford	Burgin	SiL	Low	----	--	--	--	77	33	21	12	CL	---	25.7	---	---	130	0.80	104	-	---
Tex.	11	Tex.	Jefferson	Acadia	SL	Low	SL	--	--	--	63	27	18	9	CL	111.7	17.3	94	---	134	0.74	99	X	---
	13		Jefferson	Lake Charles	SiCL	Low	SiL	27	46	27	93	38	23	15	CL	96.4	24.9	91	---	114	0.55	63	X	---
	14		Jefferson	Lake Charles	SL	Low	----	--	--	--	93	29	21	8	CL-ML	93.2	23.6	81	---	134	0.20	27	X	---
	15		Jefferson	Edna	SiL	Low	----	--	--	--	84	25	16	9	CL	98.0	24.2	93	---	48	0.16	8	X	---
	23		Bastrop	Bastrop	SL	High	SL	--	--	--	57	21	10	11	CL	105.9	18.7	79	---	178	0.77	137	-	---
Va.	33	Va.	Albemarle	Davidson	SiC	Low	----	--	--	--	75	41	29	12	ML	97.5	28.4	107	---	177	0.63	111	X	---
	34		Louisa	Iredell-Mecklenburg	SiC	Low	----	--	--	--	66	45	26	19	CL	103.0*	26.2	113*	---	153	0.62	95	X	---
	35		Albemarle	Bucks-Penn-Lansdale	SiC	Low	----	--	--	--	76	33	20	13	CL	95.8	27.4	99	---	99	0.46	46	X	---
	36		Lunenburg	Lloyd-Penn-Lansdale	----	Low	L	43	48	12	81	23	20	3	ML	92.9	24.9	84	---	120	0.28	34	X	---
Vt.	24	Vt.	Orange	Suffield	SiL	Low	SiL	--	--	--	93	--	--	NP	ML	76.1	42.8	97	---	127	0.45	57	X	---
	25		Rutland	Saco	SiL	Low	SiL	--	--	--	72	33	24	9	ML	86.0	33.6	97	---	90	0.38	34	X	Bottomland flat
Wash.	6	Wash.	Spokane	Palouse	SiL	High	SiL	--	--	--	97	35	18	17	CL	102.5	22.4	96	---	150	0.79	119	-	---
	7		Spokane	Cheney	SiL	Low	SiL	--	--	--	85	35	22	13	CL	80.0	35.1	87	---	122	0.59	72	-	Lower slope

(Continued)

Note: Data on this sheet obtained in 1951.
* Questionable value, not used in analysis.

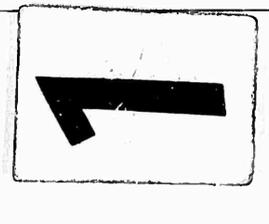

Table B2

Field Trip Site Data, 1951 and 1953

ndition h to er le	CI	RI	RCI	Low-Topography Site at High-Moisture Condition	Site Environmental Data: Topographic Position	Slope, %	Drainage: Surface	Drainage: Internal	Vegetation	Land Use	Eng. Conf. Land Form	Remarks
-	153	0.75	115	-	Bottomland flat	0	Medium	Poor	---	---	IIB1	Close to creek; rock at 12 in.
-	103	0.56	58	-	Lower slope	Gentle	Good	Good	Herbaceous	Undisturbed	IVA5	
-	111	0.39	43	X	Bottomland flat	0	Good	Good	---	---	IIB1	Close to river
-	89	0.51	45	-	Upland ridge	---	---	---	---	---	---	
-	120	0.38	46	X	---	---	---	---	---	---	---	Close to river
-	100	0.39	39	X	---	---	Good	Poor	---	Logged	---	Close to creek
-	59	0.51	30	X	---	---	Medium	Poor	---	---	---	
-	135	1.01	136	-	---	---	---	---	---	---	---	
-	74	0.69	51	X	Bottomland flat	0	---	---	---	---	---	Close to creek
-	262	1.40	300+	-	Bottomland flat	0	---	---	Herbaceous	---	---	Bank of creek
-	75	0.48	36	X	---	---	---	---	---	---	---	
-	156	0.35	55	X	Bottomland flat	0	Good	Good	---	---	ID1	Next to river
-	115	0.66	76	X	---	---	Good	Good	---	---	---	Subject to flooding
-	144	0.88	127	X	---	---	Good	Good	---	---	---	Subject to flooding; material stony
-	153	0.55	84	X	---	---	Poor	Poor	---	---	---	
-	180	0.48	86	X	---	---	Good	Poor	---	---	---	
-	103	0.62	64	X	Bottomland depression	0	Poor	---	Herbaceous	Undisturbed	VC2	Swampland
-	60	0.61	37	X	Bottomland depression	0	Poor	---	---	Undisturbed	VC2	Marshland
-	112	0.40	45	X	Bottomland flat	0	Poor	Poor	Herbaceous	---	IIB1	
-	44	0.52	23	X	Bottomland flat	0	Poor	Poor	---	---	---	Along stream
-	96	0.13	12	X	Bottomland flat	0	Poor	Poor	---	---	---	
-	133	0.41	54	-	---	---	Good	Good	Herbaceous	---	IVA1	Rock at 12+ in.
-	136	0.47	64	X	Upper slope	Gentle	Poor	Poor	---	---	---	Rock at 12+ in.
-	38	0.65	57	X	Bottomland flat	0	Poor	Poor	Herbaceous	Undisturbed	IIB1	On creek bank
-	101	0.41	41	X	---	---	---	---	Herbaceous	---	---	
-	194	0.40	78	-	Bottomland flat	---	---	---	---	---	---	
-	167	1.05	175	-	---	---	---	---	Herbaceous	---	---	
-	82	0.44	36	X	---	---	Med-good	Poor	---	---	---	Close to creek
-	56	0.61	34	X	Bottomland flat	0	Poor	Poor	---	---	---	Bank of creek
-	187	1.47	275	-	---	---	Poor	Good	---	Undisturbed	IIB1	
-	146	1.16	154	-	---	---	---	---	Tree grove	Undisturbed	---	
-	150	0.21	31	X	---	---	---	---	---	---	---	50 ft from river
-	174	0.56	97	X	---	---	---	Medium	---	---	IC	
-	119	0.73	87	-	Upland flat	0	Poor	Poor	---	---	IC	
-	104	0.60	62	X	Upland flat	0	Poor	Poor	---	---	IC	
-	100	0.61	61	X	Bottomland flat	0	Medium	Medium	---	---	---	Bank of stream
-	81	0.55	45	X	Bottomland flat	0	Poor	Med-poor	---	---	IIB1	Bank of stream
-	116	0.62	72	-	Bottomland flat	0	---	---	---	---	IIB4a	
-	105	0.62	65	X	---	---	---	---	---	---	---	Close to river
-	227	0.84	191	-	Bottomland depression	0	Poor	Poor	---	---	IIC2	150 ft from lake
-	300+	0.54	162+	-	Terrace flat	0	Good	Good	---	---	IIC1	
-	113	0.55	62	X	---	---	Good	Good-poor	---	Cultivated	---	
-	153	0.22	34	X	Terrace flat	0	Medium	Good	---	---	IIC1	
-	70	0.56	39	X	Terrace flat	0	Medium	Good	---	---	IIC1	Close to stream
-	159	0.80	127	X	Bottomland flat	0	---	---	---	Undisturbed	IIB1	Gravelly material
-	192	0.74	142	-	---	---	Good	Good-poor	Herbaceous	Hay	IIB1	
-	109	0.34	37	X	---	---	---	---	---	Cultivated	---	
-	178	0.76	135	-	---	---	Good	Poor	---	Cultivated	---	
-	159	0.64	102	X	Upland flat	0	Med-good	Medium	---	Cultivated	---	
-	195	0.63	122	-	Upland ridge	0	Med-good	Medium	---	Lawn	---	
-	111	0.43	48	X	---	---	Poor	Poor	---	Lawn	---	
-	150	0.77	115	-	---	---	Medium	Medium	---	Cultivated	---	
-	183	0.54	99	-	Lower slope	---	Good	Med-poor	---	---	---	
-	201	0.66	133	-	Upland ridge	---	Good	Good	---	---	---	
-	249	1.10	274	-	Upper slope	---	Good	Med-poor	Orchard	Cultivated	---	
-	244	1.25	305	-	Lower slope	---	Good	Good, locally poor	---	---	---	
-	212	0.75	159	-	Upper slope	---	Med-good	Medium	Orchard	Cultivated	---	
-	81	0.81	66	X	---	---	Good	Poor	Bare	Cultivated	---	
-	173	0.46	79	X	---	---	---	---	---	Grazed	---	
-	156	0.28	44	X	Bottomland flat	0	Good	Good	---	---	IIB1	On creek bank
-	45	0.32	14	X	---	---	Poor	Poor	---	---	---	
-	142	0.54	76	-	---	---	Good	Good	---	---	---	
-	200	0.62	124	X	Bottomland flat	0	Good	Good	---	---	IIB1	On creek bank
-	184	0.75	138	-	Bottomland flat	0	Medium	Poor	---	---	IIB1	On creek bank
-	111	0.62	69	X	---	---	Poor	Medium	---	---	---	Heavy rain while testing
-	13	0.50	114	-	---	---	Poor	Poor	---	Grazed	---	
-	134	0.74	99	X	---	---	Med-poor	Poor	---	---	---	
-	124	0.53	65	X	---	---	Poor	Poor	---	---	---	
-	134	0.21	27	X	---	---	Poor	Poor	---	---	---	
-	48	0.26	8	X	---	---	Poor	Poor	---	---	---	
-	178	0.77	137	-	---	---	Good	Good	---	---	---	
-	177	0.63	111	X	---	---	Med-good	Med-poor	---	---	IVB2	
-	193	0.62	45	X	---	---	Medium	Poor	---	---	IVB2	Rock 14+ in.
-	74	0.46	46	X	---	---	---	---	---	---	IVB2	
-	123	0.23	34	X	---	---	Medium	Medium	---	---	IVB2	
-	127	0.45	57	X	---	---	Medium	Medium	---	---	---	0.2 mile from lake
-	79	0.38	34	X	Bottomland flat	0	Poor	Poor	---	---	IIB1	Near river
-	156	0.71	111	-	---	---	Good	Good	---	---	---	Localized seepage
-	122	0.59	72	-	Lower slope	Very gentle	Medium	Poor	Cultivated wheat	Cultivated	---	

(Continued)

(1 of 3 sheets)

Table B2

Table B2 (Continued)

Site No.	Location: State	Location: County or Parish	USDA Soil Map Identification: Soil Series	USDA Soil Map Identification: Type	Topography Class	Soil Data, 6- to 12-In. Layer: USDA Texture: Type	USDA Texture by Wt, %: Sand	Silt	Clay	USCS: % Fines	Atterberg Limits: LL	PL	PI	USCS: Type	Wet-Season Condition: Dry Density lb/cu ft	MC %	% Sat.	Depth to Water Table in.	CI	RI	RCI	Low-Topography Site at High-Moisture Condition	Topographic Position
Ala. 1	Ala.	Macon	Rel Bay	SL	High	SCL	61	17	22	40	22	12	10	SC	109.5	13.1	68	---	191	----	---	-	---
2		Macon	Ontow	C	Low	C	10	25	65	95	108	31	77	CH	---	42.3	---	---	91	----	---	-	Upland flat
3		Macon	Valden	SL	Low	CL	53	29	18	87	53	21	32	CH	93.6	25.3	95	---	116	----	---	-	Bottomland flat
4		Lee	Madison	SL	Low	SL	55	30	15	47	31	20	11	SC	95.1	27.8	99	---	192	----	---	-	Upland flat
5		Lee	Georgeville	SiC	Low	SiC	10	46	44	92	65	32	33	CH	92.8	30.2	100	---	261	----	---	-	Upland flat
6		Lee	Congaree	SiL	Low	SiL	8	69	23	93	62	36	26	MH	78.2	41.5	98	15+	157	0.75	118	X	Bottomland flat
7		Lee	Davidson	CL	High	CL	22	50	28	82	46	26	20	CL	86.1	29.9	86	---	112	0.79	88	-	Upland flat
8		Perry	Kalmia	SL	Low	SL	53	30	17	54	19	14	5	CL-ML	104.6	17.4	79	---	142	0.27	38	-	Terrace flat
9		Hale	Akron	SL	High	C	33	20	47	69	53	21	32	CH	---	24.4	---	---	281	----	---	-	Upland upper slope
10		Hale	Amite	SL	Low	CL	40	24	31	58	33	14	19	CL	110.6	18.7	100	---	156	0.71	112	X	Lower slope
11		Hale	Norfolk	SL	High	L	38	40	22	64	29	14	11	CL	110.6	16.5	88	---	107	0.71	76	-	Upland
12		Hale	Bell	C	Low	SiC	7	50	43	97	58	24	34	CH	77.6	31.5	73	---	141	----	---	-	Bottomland flat
13		Sumpter	Pheba	L	High	L	45	45	12	65	--	--	NP	ML	100.8	18.9	78	---	154	0.25	38	-	Upper slope
14		Colbert	Colbert	SiL	Low	SiCL	17	38	32	94	45	18	27	CL	102.2	21.6	88	---	171	0.86	147	-	Upper slope
15		Colbert	Hartsells	SL	High	L	27	49	24	78	37	19	18	CL	103.5	21.5	97	---	177	0.91	161	-	Upland slope
16		Colbert	Abernathy	SiL	Low	SiL	7	72	21	94	53	17	36	CL	98.4	24.0	93	---	118	0.60	71	X	Bottomland depression
17		Colbert	Dewey	L	High	SiL	7	70	23	95	52	20	32	CL	77.9	33.2	97	---	206	0.74	152	-	Upland slope
18		Colbert	Guthrie	SiL	Low	SiL	15	69	16	88	28	18	9	CL	102.6	20.6	90	---	198	0.52	82	X	Bottomland flat
19		Lee	Chewacla	SiL	Low	SiL	8	67	25	96	44	29	15	ML	94.3	29.1	94	---	183	0.68	124	X	Bottomland flat
20		Lee	Marlboro	SL	Low	SCL	55	17	28	46	9	19	19	SC	111.3	16.6	99	---	149	----	---	-	Upland flat
Ark. 1	Ark.	Lonoke	Conway	SiL	Low	SiL	13	65	22	91	51	15	13	CL	100.5	23.8	105	---	190	0.64	68	X	Upland flat
2		Lonoke	Sasquehanna	SL	Low	L	40	40	14	90	20	16	4	ML	110.7	16.1	86	---	220	0.97	214	-	Upper slope
3		Lonoke	Crowley	SiL	Low	SiL	23	62	25	93	24	13	11	CL	97.0	28.7	99	6-12	122	0.45	55	X	Upland flat
4		Pulaski	Caddo	SL	Low	L	43	44	13	77	25	16	9	CL	96.8	22.8	90	6-12	140	0.77	77	X	Bottomland flat
5		Pulaski	Saston	SL	High	LS	82	8	10	22	--	--	NP	SM	101.8	16.8	90	---	123	----	---	-	Upper slope
6		Pulaski	Huntsville	L	Low	SiL	20	54	26	87	43	21	22	CL-ML	95.9	25.5	93	---	119	0.96	62	X	Upper slope
Fla. 1	Fla.	Alachua	Portsmouth	SP	Low	S	93	4	3	12	--	--	NP	SP-SM	97.2	21.3	92	---	21	----	---	-	Bottomland depression
2		Marion	Fellowship	L	Low	SL	28	37	34	70	43	16	27	CL	89.7	26.6	86	6	91	0.67	61	X	Bottomland depression
3		Sumter	Parkwood	CL	Low	CL	44	33	23	44	27	22	5	CH	---	28.	---	---	194	----	---	-	Bottomland depression
4		Flagler	Bladen	SL	Low	L?	54	22	24	64	34	23	11	SC	94.3	24.	92	9	59	----	---	-	Bottomland depression
5		Flagler	Bladen	C	Low	SC	32	23	45	44	54	17	37	SC	98.9	34.1	92	---	79	----	---	-	Bottomland depression
6	Ala.	Sumpter	Pheba	L	High	CL	54	37	11	92	26	14	12	ML	104.8	17.4	80	---	110	0.30	33	-	Upper slope
Ga. 1	Ga.	Elbert	Appling	SL	High	SCL	58	17	25	48	23	14	24	SC	104.2	18.4	82	---	156	----	---	-	---
2		Elbert	Iredell	L	Low	L	35	42	23	76	35	22	13	CL	98.7	24.8	96	---	147	0.57	84	X	---
3		Elbert	Wilkes	SL	Low	SL	57	28	15	53	18	17	3	ML	104.8	17.4	82	---	119	0.49	58	-	---
4		Elbert	Durham	SL	High	SL	58	28	14	38	28	14	4	SM	104.1	17.2	78	---	142	----	---	-	Upper slope
5		Hart	Madison	SL	High	SCL	43	32	25	74	31	17	13	CL	100.7	18.4	77	---	131	0.63	148	-	---
6		Hart	Iredell	SL	Low	SCL	42	32	26	62	34	17	17	CL	98.8	18.5	74	---	234	0.74	164	-	---
7		Bartow	Hiwassee	L	Low	SCL	37	34	29	57	37	23	14	CL	94.4	23.5	97	---	244	0.75	183	X	---
8		Bartow	Decatur	CL	High	SiCL	17	48	35	89	55	27	28	CL	100.8*	22.2	112*	---	128	0.66	87	-	Upland ridge
9		Bartow	Hartsells	L	High	SiL	34	53	13	57	28	21	7	CL-ML	89.1	29.8	73	---	149	.45	67	-	Upper slope
10		Bartow	Fannin	L	Low	SL	38	42	20	63	43	21	23	CL	102.4	24.3	103	---	160	0.76	122	X	Lower slope
11		Bartow	Dewey	SiL	Low	SiCL	27	44	29	87	48	27	21	CL	96.2	25.7	100	---	169	0.67	113	X	Lower slope
12		Bartow	Armuchee	L	Low	SiL	24	49	27	78	37	21	16	CL	103.	24.0	103	15	162	0.56	90	X	Upper slope
13		Floyd	Talladega	L	High	L	43	43	14	74	24	23	1	CL-ML	122.7	13.4	87	---	87	0.24	21	-	Upper slope
14		Floyd	Hilbert	SiL	Low	SiCL	7	63	30	97	51	22	29	CH	98.1	28.8	98	---	194	.72	121	X	Upper slope
15		Floyd	Montevallo	SiCL	Low	L	35	44	21	64	24	21	3	CL-ML	109.6	18.4	93	---	178	0.46	79	X	Lower slope
16		Floyd	Hanceville	SiCL	Low	SCL	22	41	37	80	47	25	22	CL	108.3	21.5	92	---	184	0.47	59	X	Lower slope
Ky. 1	Ky.	Muhlenberg	Zanesville	L	Low	SiL	6	74	20	94	37	22	15	CL	92.0	29.8	94	18	143	.57	55	X	Lower slope
2		Muhlenberg	Eden	SiCL	Low	SiCL	4	54	42	96	37	23	14	CH	97.4	27.4	94	---	116	.53	67	X	Terrace slope
3		Morgan	Muskingum	SiL	Low	SiL	4	71	25	94	34	21	13	ML	94.8	28.3	94	---	148	.56	75	X	Lower slope
4		Morgan	Wellston	SiL	High	SiL	9	73	18	93	34	21	13	CL	94.3	27.4	92	---	147	.54	71	-	Upper slope
5		Morgan	Muskingum	SiL	Low	SiL	4	71	25	94	34	21	13	CL	94.2	28.4	94	---	224	.47	111	X	Lower slope
6		Wolfe	Pembroke	SiL	Low	SiL	4	74	22	94	34	21	13	ML	97.4	27.1	97	6-12	147	.50	72	X	Lower slope
7		Wolfe	Pembroke	SiL	Low	SiL	4	74	22	94	34	21	13	CL	97.4	27.5	98	6-12	157	.54	74	X	Bottomland flat
8		Morgan	Huntington	SiL	Low	SiL	4	74	22	94	34	21	13	CL	94.1	30.7	98	6-12	171	.61	83	X	Upland flat
9		Wolfe	Ashton	SiL	Low	SiL	4	74	22	94	34	21	13	CL	94.7	27.4	93	---	148	.55	73	X	Bottomland flat
Md. 1	Md.	Harford	Baltimore	SiL	Low	SiL	11	57	32	91	43	22	21	ML	98.1	24.4	96	---	158	.73	115	X	Lower slope
2		Harford	Chester	SiL	High	SiL	11	63	26	91	36	20	16	CL	101.4	23.4	97	---	146	.83	103	X	Lower slope
3		Harford	Hagerstown	SiL	High	SiL	11	57	32	91	43	22	21	CL	96.3	27.4	97	---	117	.60	81	-	Upper slope
4		Harford	Aldino	SiL	Low	SiL	11	57	32	91	43	22	21	CL	97.4	26.1	97	---	203	.91	94	X	Bottomland flat
5		Harford	Glenelg	SiL	High	SiL	11	57	32	91	43	22	21	CL	97.4	27.2	98	---	190	.79	112	-	Upper slope
6		Harford	Mt. Airy	SiL	High	SiL	11	57	32	91	43	22	21	CL	100.3	24.0	97	---	230	1.00	228	-	Upland slope
7		Harford	Brandywine	SiL	High	SiL	11	57	32	91	43	22	21	CL-ML	97.4	24.4	94	---	98	.57	53	X	Upland flat
8		Harford	Watchung	SiL	Low	SiL	11	57	32	91	43	22	21	SM-SC	104.7	18.4	78	---	139	----	---	-	Terrace flat
9		Harford	Penn	SiL	High	SiL	11	57	32	91	43	22	21	CL	97.4	27.4	97	---	98	.54	53	X	Upper slope
Md. 1	Md.	Caroline	Annemessex	SiL	Low	SiL	4	74	22	94	34	21	13	ML	94.4	28.4	98	---	257	.96	247	-	Terrace flat
2		Caroline	Matapeake	SiL	High	SiL	4	74	22	94	--	--	NP	SM	99.	17.8	74	---	83	----	---	-	Upland ridge
3		Caroline	Mt. Lucas	SiL	High	SiL	4	74	22	94	34	21	13	ML	94.8	28.7	94	---	174	.63	107	-	Upper slope
4		Caroline	Annemessex	SiL	Low	SiL	4	74	22	94	--	--	NP	SM	94.8	34.6	94	---	47*	----	---	-	Terrace flat
5		Caroline	Aldino	L	Low	SL	4	74	22	94	--	--	NP	ML	94.4	37.2*	92	---	49*	----	---	-	Upper slope
6		Caroline	Deal	SiL	Low	SiL	4	74	22	94	34	21	13	SM	94.8	25.8	92	---	105	----	---	-	Lower slope
7		Kent	Elkton	SiL	Low	SiL	4	74	22	94	--	--	NP	SM	94.8	27.4	92	---	142	----	---	-	Bottomland depression
Mass. 1	Mass.	Worcester	Paxton Stony	----	Low	SiL	13	62	25	94	34	21	13	ML	94.4	28.	94	12-24	227	1.76	169	X	---

(Continued)

Notes: Data on this sheet obtained in [illegible]
* [illegible]
† Engineering Conference [illegible]

Table B2 (Continued)

Condition Depth to Water Table				Low-Topography Site at High-Moisture Condition	Site Environmental Data							
in.	CI	RI	RCI		Topographic Position	Slope, %	Drainage: Surface	Drainage: Internal	Vegetation	Land Use	Eng. Conf. Land Form	Remarks
---	191	----	---	-	---	Very gentle	Good	Good	Herbaceous	Undisturbed	IIB4	
---	91	----	---	-	Upland flat	0	Med-poor	Good	Herbaceous	Grazed	IIB4	Water ponded in depressions
---	116	----	---	-	Bottomland flat	0	Medium	Poor	Herbaceous	Undisturbed	IIB1†	
---	192	----	---	-	Upland flat	0	Good	Medium	Pine forest	Grazed	IVB3	
---	261	----	---	-	Upland flat	0	Good	Medium	Garden	Cultivated	IVB3	
15+	157	0.75	118	X	Bottomland flat	0	Medium	Medium	Herbaceous	Grazed	IIB1	
---	112	0.73	86	-	Upland flat	0	Good-med	Poor	Herbaceous & forest	Logged	IVB1	
---	142	0.27	38	-	Terrace flat	0	Med-poor	Medium	Herbaceous	Grazed	IIC1	
3+	281	----	---	-	Upland upper slope	Very gentle	Med-good	Med-poor	Herbaceous	Grazed	IVC1	
---	158	0.71	112	X	Lower slope	Gentle	Poor-med	Med-good	Herbaceous	Lawn	IVC1	
---	107	0.71	76	-	Upland	0	Med-poor	Med-poor	Pine forest (field)	Undisturbed (previously cultivated)	---	
---	141	----	---	-	Bottomland flat	0	Poor	Poor	Herbaceous	Grazed	IIB1	
---	154	0.25	38	-	Upper slope	Very gentle	Medium	Medium	Cultivated, cotton	Cultivated	---	
---	171	0.86	147	-	Upper slope	Gentle	Medium	Poor	Scattered bushes & trees	Undisturbed	IIB1	
---	177	0.91	161	-	Upland slope	Gentle	Good	Good	Herbaceous	Undisturbed	IVA3	
---	118	0.60	71	X	Bottomland depression	0	Poor	Medium	Herbaceous	Cultivated, idle	---	
---	206	0.74	152	-	Upland slope	Gentle	Med-poor	Medium	Herbaceous	Undisturbed	IVA1	
---	156	0.52	82	X	Bottomland flat	0	Poor	Poor	Herbaceous/trees	Grazed	---	Partly covered with water
---	183	0.68	124	X	Bottomland flat	0	---	---	Herbaceous	Grazed	IIB1	Partly covered with water
---	149	----	---	-	Upland flat	0	Medium	Medium	Herbaceous, bushes	Cultivated, idle	---	
---	136	0.64	88	X	Upland flat	0	Medium	Poor	Herbaceous	Cultivated, idle	---	
---	220	0.77	215	-	Upper slope	1	Med-good	Poor	Herbaceous	Hay	IIB4	
6-12	122	0.45	55	X	Upland flat	0	Poor	Poor	Cultivated, pine	Cultivated	---	
6-12	130	0.77	97	X	Bottomland flat	0	Poor	Poor	Herbaceous	Undisturbed	IIB1	Marshy with some puddles
---	113	----	---	-	Upper slope	1	Good	Medium	Mixed, pine & hardwood	Logged	---	
---	125	0.56	69	X	Upper slope	1	Good	Good	Mixed, pine & hardwood	Undisturbed	IVA4	
---	211	----	---	-	Bottomland depression	0	Poor	Poor	Herbaceous	Grazed	IIB2	Standing water
6	42	0.07	11	X	Bottomland depression	0	Medium	Poor	Herbaceous	Undisturbed	IIB2	
---	154	----	---	-	Bottomland depression	0	Poor	Med-poor	---	---	IVA1	
8	37	----	---	-	Bottomland depression	0	Poor	Poor	---	---	---	
---	77	----	---	-	Bottomland depression	0	Poor	Poor	---	---	---	
---	120	0.56	55	-	Upper slope	Gentle	Poor-med	Med-poor	Herbaceous, few trees	Undisturbed	---	
---	139	----	---	-	---	Very gentle	Med-poor	Medium	Herbaceous	---	---	
---	147	0.87	94	X	---	0	Poor-med	Poor	Herbaceous	Cultivated, idle	---	
---	114	0.42	38	-	---	Gentle	Poor	Poor	Herbaceous	Cultivated, idle	---	
---	148	----	---	-	Upper slope	Gentle	Medium	Medium	Cultivated, corn	Cultivated	---	
---	231	0.83	142	-	---	0	Med-poor	Medium	Cultivated, corn	Cultivated	---	
---	234	0.76	164	-	---	0	Med-poor	Medium	Herbaceous	Cultivated, idle	---	Stony
15	244	0.75	182	X	---	Gentle	Poor	Poor	Herbaceous	Cultivated, idle	---	Stony
---	125	0.60	87	-	Upland slope	1	Poor	Poor	Herbaceous	Cultivated, idle	---	
---	135	.45	47	-	Upper slope	Gentle	Poor	Poor	Herbaceous	Cultivated, idle	---	
---	160	0.76	122	X	Lower slope	Gentle	Med-poor	Med-poor	Cultivated, corn	Logged	---	
---	169	0.87	147	X	Lower slope	Very gentle	Med-poor	Med-poor	Herbaceous	Cultivated, idle	---	
15	162	0.83	134	X	Upper slope	1	Poor	Med-poor	Cultivated, corn	Cultivated	---	Water table high; rocx pebbles
---	87	0.53	46	-	Upper slope	1	Med-poor	Med-poor	Herbaceous	---	---	Very pebbly
---	124	0.72	111	X	Lower slope	1	Med-poor	Poor	Cultivated, corn	Cultivated	---	
---	178	0.98	174	X	Lower slope	1	Med-poor	Poor	Herbaceous	---	---	
---	120	0.47	56	X	Lower slope	1	Poor	Poor	Herbaceous	Cultivated, idle	---	
18	143	0.87	95	X	Lower slope	1	Med-poor	Med-poor	Cultivated, corn	Cultivated	---	Some water in puddles
---	146	0.83	121	X	Drainage slope	1	Med-poor	Med-poor	Herbaceous	Undisturbed	---	
---	145	0.82	119	X	Lower slope	1	Poor	Poor	Herbaceous/trees	Lawn	IIC1	Water standing in puddles
---	167	0.84	141	-	Upper slope	1	Poor	Poor	Herbaceous	Lawn	---	Some water standing on surface
---	241	0.87	210	X	Lower slope	1	Poor	Poor	Herbaceous	Cultivated, idle	---	
6-12	144	0.82	118	X	Lower slope	1	Poor	Poor	Herbaceous	Grazed	IVA1	
6-12	167	0.87	145	X	Bottomland flat	0	Poor	Poor	Herbaceous	Cultivated, idle	---	
6-12	91	0.61	56	X	Upland flat	0	Poor	Poor	Herbaceous/trees	Undisturbed	IIB1	Partly covered with water
0	122	0.64	78	X	Bottomland flat	0	Medium	Poor	Herbaceous	Cultivated, idle	IIB1	
---	238	0.87	207	X	Upper slope	Gentle	Med-poor	Poor	Herbaceous	Undisturbed	---	
---	167	0.58	97	-	Upland flat	0	Medium	Poor	Herbaceous	Cultivated, idle	---	Few pebbles
---	124	----	---	-	Upper slope	1	Poor	Poor	Herbaceous	Undisturbed	IVA4	
---	230	0.87	200	X	Bottomland flat	0	---	---	Herbaceous	Undisturbed	IVA1	
---	142	0.83	118	X	Bottomland flat	0	Medium	Poor	Herbaceous	Cultivated, idle	IVA1	
---	158	0.76	120	X	Lower slope	Gentle	Poor	Poor	Herbaceous	Undisturbed	IVB3	
---	146	0.83	121	X	Lower slope	Gentle	Medium	Medium	Herbaceous	Cultivated, idle	---	Many rock pebbles
---	111	0.64	71	-	Upper slope	1	Poor	Medium	Herbaceous	Cultivated, idle	---	Few rock pebbles
---	210	0.91	191	X	Bottomland flat	0	Poor	Medium	Herbaceous/trees	Undisturbed	---	
---	130	0.76	99	-	Upper slope	Gentle	Poor	Medium	Herbaceous/trees	Undisturbed	---	
---	172	0.98	169	-	Lower slope	Gentle	Poor	Medium	Herbaceous/trees	Undisturbed	---	
---	90	0.53	48	X	Upland flat	0	Poor	Poor	Herbaceous/trees	Undisturbed	---	
---	125	----	---	-	Upper slope	1	Poor	Poor	Herbaceous/trees	Undisturbed	---	
---	78	0.64	50	X	Drainage flat	0	Poor	Poor	Herbaceous	Lawn	---	Machine
---	63	0.42	26	-	Upper slope	Very gentle	Med-poor	Med-poor	Herbaceous	Undisturbed	---	
---	63	----	---	-	Upland flat	0	Poor	Poor	Herbaceous/trees	Undisturbed	---	
---	60	0.53	32	-	Upper slope	1	Poor	Poor	Herbaceous/trees	Undisturbed	---	
---	270	----	---	-	Terrace flat	0	Poor	Poor	Herbaceous/trees	Undisturbed	---	
---	215	----	---	-	Upper slope	Gentle	Poor	Poor	Herbaceous/trees	Undisturbed	---	
---	168	----	---	-	Bottomland depression	Gentle	Poor	Poor	Herbaceous/trees	Undisturbed	---	
24+	62	0.76	47	X	---	Very gentle	Poor	Poor	---	Cultivated, idle	IIIA1	Iron concretions

(2 of 3 sheets)

Table B2

Table B2 (Concluded)

Site No.	Location: State	Location: County or Parish	WSDA Soil Map Identification: Soil Series	Type	Topography Class	Soil Data, 6- to 12-in. Layer: USDA Texture by Wt, % Type	Sand	Silt	Clay	USCS: % Fines	Atterberg Limits: LL	PL	PI	USCS Type	Wet-Season Condition: Dry Density lb/cu ft	MC %	% Sat.	Depth to Water Table in.	CI	RI	RCI	Low-Topography Site at High-Moisture Condition	Topographic Position	
N. Y. 1	N. Y.	Seneca	Ottawa	LS	Low	SiL	37	54	7	39	23	23	NP	ML	76.8*	35.2*	81*	6-12	73	0.16	12	X	---	Ve
2		Seneca	Dunkirk	SL	High	SL	57	37	6	63	--	--	NP	ML	88.7	25.2	78	---	157	1.06	166	-	---	Ve
3		Seneca	Ontario	L	Low	L	48	42	10	66	28	20	8	CL	94.5	24.5	86	12-18	187	0.69	129	X	Upper slope	
4		Seneca	Scholarie	SiCL	Low	SiL	30	50	20	75	32	18	14	CL	101.2	20.7	96	18	206	0.70	144	X	Lower slope	
5		Seneca	Honeoye	SiL	Low	SiL	16	69	15	71	37	31	26	MH	85.0	33.4	87	---	106	0.77	82	X	Upland flat	
6		Seneca	Lyons	SiCL	Low	SiCL	14	50	36	88	45	24	21	CL	96.6	25.2	94	12-18	68	0.78	53	X	Upland flat	
7		Seneca	Darien	SiL	Low	SiL	28	53	19	77	39	24	15	CL	101.6	----	---	---	101	----	---	-	Upland flat	
8		Seneca	Langford	SiL	Low	SiL	20	60	14	74	46	28	18	ML	88.1	29.0	87	---	93	0.46	43	X	Upland flat	
9		Onondaga	Farmington	L	High	SiL	28	62	10	77	43	28	15	ML	89.6	31.0	88	---	202	0.87	176	-	Upland slope	Ge
10		Onondaga	Chippewa	SiL	Low	SiL	40	54	6	67	49	32	17	ML	79.3	37.1	90	4	143	0.63	90	X	Bottomland flat	
11		Onondaga	Canfield	SiL	High	SiL	37	57	6	68	42	27	15	ML	93.6	24.9	86	---	240+	0.83	206+	-	Upper slope	
12		Onondaga	Lordstown	SiL	High	SiL	13	72	15	59	71	50	21	MH	95.7	67.0	89	---	215+	0.28	60+	-	Upland ridge	
13		Onondaga	Erl	SL	Low	SiL	24	67	9	61	63	40	23	MH	73.2	42.8	88	6-12	111	0.94	104	X	Bottomland flat	
14		Albany	Claverack	SL	Low	SiL	12	78	10	46	34	26	8	ML	---	29.9	---	28	185	0.55	103	X	Terrace flat	
15		Albany	Hudson	SiL	Low	SiL	7	83	10	70	38	26	12	ML	83.6	34.8	94	18-20	69	0.46	33	X	Terrace flat	
16		Albany	Lyons	SL	Low	SL	63	31	6	51	--	--	NP	ML	97.2	18.4	69	---	127	0.91	116	-	Terrace slope	
Ohio 1	Ohio	Adams	Bentonville	SiL	Low	SiCL	2	69	29	67	31	20	11	CL	89.6	27.2	85	---	193	0.89	92	-	Upland slope	Ge
2		Adams	Brutus	SiL	High	SiCL	8	60	32	76	43	19	24	CL	86.6	27.8	81	---	203	1.02	207	-	Upland flat	
3		Adams	Muskingum	SiL	High	SiCL	11	56	33	74	37	22	15	CL	102.9	21.6	94	---	211	0.70	148	-	Upland ridge	Ver
4		Logan	Fox	SiL	Low	SiL	13	64	23	62	45	25	20	CL	97.3	26.7	101	---	168	0.82	138	-	Bottomland flat	
5		Logan	Carlisle	PM	Low	L	47	42	11	17	144	99	45	OH	---	----	---	---	234+	----	---	-	Bottomland depression	
6		Logan	Clyde	SiCL	Low	SiL	14	51	35	95	51	28	23	CH	---	----	---	---	---	----	---	-	Upper slope	Gen
7		Logan	Miami	SiL	High	SiL	23	65	12	71	32	20	12	CL	95.7	22.0	80	---	275+	----	---	-	Upland flat	
8		Muskingum	Wilbit	SiL	High	SiL	7	78	15	7	39	24	11	CL	99.1	28.9	99	---	215+	0.90	230+	-	Upper slope	Gen
9		Muskingum	Tyler	SiL	Low	SiL	15	67	18	71	40	20	14	ML	99.3	28.8	98	---	137	0.50	110	X	Terrace flat	
10		Muskingum	Zanesville	SiL	High	SiL	6	70	24	44	3	23	7	ML	93.2	25.3	96	---	234	0.58	136	-	Upper slope	Gen
Pa. 1	Pa.	Indiana	Upshur	SiL	High	SiL	16	67	17	53	48	25	23	ML	83.0	35.1	96	---	245	0.69	214	-	Upper slope	Ste
2		Indiana	Belmont	SiL	Low	SiL	17	61	22	53	46	27	21	CH	94.2	33.4	96	---	102	0.62	149	-	Lower slope	Ver
3		Indiana	Monongahela	SiL	Low	SiL	13	74	13	54	30	23	13	CL	99.1	22.8	81	---	178	0.83	148	-	Bottomland flat	
4		Indiana	Clarkport	SiL	High	SiL	22	63	15	54	38	23	15	CL	99.0	23.6	79	---	272+	0.92	250+	-	Lower slope	
5		Bucks	Bucks	SiL	High	SiL	24	63	13	70	3	23	7	ML	95.2	25.3	83	---	330+	0.94	282+	-	Upper slope	
6		Bucks	Duffield	SiL	High	SiL	11	68	21	7	41	27	15	ML	94.4	32.6	90	---	125	0.88	92	-	Upper slope	
7		Bucks	Chester	SiL	High	SiL	17	64	19	53	34	24	10	ML	99.4	27.2	94	---	252+	0.55	128+	-	Upper slope	
8		Bucks	Manada	SiL	High	SiL	37	51	12	48	36	25	11	ML	93.0	24.6	91	---	81	0.90	73	-	Upland ridge	
9		Bucks	Susquehanna	SiL	High	SiL	16	64	20	43	31	23	8	CL	91.2	27.0	88	---	141	0.92	130	-	Terrace flat	
10		Bucks	Mohr	SiL	High	SiL	18	64	18	54	31	23	7	ML	93.1	25.9	91	---	253+	0.99	252+	-	---	Gen
S. C. 1	S. C.	Bibb[illegible]	[illegible]ure	SiL	Low	SiL	20	54	26	52	43	28	15	CL-ML	102.5	18.7	86	---	108	0.74	124	-	Upland flat	
2		Bibb[illegible]	[illegible]sville	SiCL	High	SiCL	19	54	27	58	33	19	14	CL	104.0	21.5	97	---	167	0.73	122	-	Upper slope	Gen
3		Bibb[illegible]	[illegible]	CL	High	CL	33	39	28	73	39	20	19	CL	101.5	22.8	96	---	139	0.75	104	-	Upper slope	Gen
Tenn. 1	Tenn.	Lincoln	Dewey	SiL	High	SiL	9	64	27	62	41	21	20	CL	101.6	22.9	96	---	143	0.75	107	-	Upper slope	Gen
2		Lincoln	Decatur	SiL	Low	SiL	11	68	21	62	31	20	11	CL	95.6	25.5	89	---	119	0.41	49	X	Upland flat	
3		Lincoln	Mury	L	Low	SiCL	14	61	25	42	46	24	22	CL	94.6	30.8	99	---	72	0.81	58	X	Upland flat	
4		Lincoln	Mercer	SiL	Low	L	36	43	21	73	33	19	14	CL	100.5	20.0	101	---	156	0.42	70	X	Lower slope	Gen
5		Cumberland	Hartsells	SL	Low	L	42	44	14	39	24	16	8	CL	104.1	21.2	98	---	121	0.38	46	X	Lower slope	Gen
6		Cumberland	Dunmore	L	Low	SiL	17	42	41	89	34	21	13	CL	96.4	26.4	98	---	59	0.55	32	X	Upland flat	
7		Bibb	Ashei	SL	Low	SiL	38	39	23	47	22	15	7	CL-ML	104.3	17.4	71	---	155	0.34	53	X	Lower slope	Gen
8		Bibb	Pickett	SiL	Low	CL	22	39	39	83	40	20	20	CL	100.4	23.6	96	---	135	0.80	108	X	Bottomland depression	Gen

Note: Data on this sheet obtained in 1963.
* Questionable value, not used in analysis.

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Table B2 (Concluded)

Region Condition. Depth to Water Table in.	CI	SI	RCI	Low-Topography Site at High-Moisture Condition	Site Environmental Data. Topographic Position	Slope, %	Drainage. Surface	Drainage. Internal	Vegetation	Land Use	Eng. Conf. Land Form	Remarks
6-12	73	0.10	12	X	---	Very gentle	Poor	Poor	Herbaceous/trees	Undisturbed	---	Hardpan at 2 ft
---	157	1.00	100	-	---	Very gentle	Medium	Medium	Herbaceous	Hay	---	
12-18	187	0.69	129	X	Upper slope	20	Medium	Medium	Herbaceous	Undisturbed	IDj	Rock pebbles
18	200	0.75	144	X	Lower slope	--	Medium	Poor	Herbaceous	Grazed	IDj	Hardpan at 13 in.; rock pebbles
---	136	0.77	82	X	Upland flat	0	Medium	Medium	Herbaceous/trees	Undisturbed	ID2	Some surface water
12-18	68	0.78	53	X	Upland flat	0	Poor	Poor	Herbaceous	Cultivated, idle	ID2	
---	141	----	---	-	Upland flat	0	Medium	Poor	---	---	ID2	Rock pebbles
---	93	0.46	43	X	Upland flat	0	---	---	Herbaceous	Undisturbed	ID2	
---	202	0.87	176	-	Upland slope	Gentle	Good	Good	Herbaceous	Undisturbed	ID2	Rock pebbles
4	143	0.63	90	X	Bottomland flat	0	Poor	Poor	Herbaceous	Undisturbed	ID2	Rock pebbles
---	240+	0.85	204+	-	Upper slope	20	Good	Medium	---	Cultivated	---	Many rock pebbles
---	235+	0.28	66+	-	Upland ridge	0	Good	Medium	Forest, mixed fir & elm	Undisturbed	---	Many rock pebbles
6-12	111	0.94	104	X	Bottomland flat	0	Medium	Poor	Hardwood	Undisturbed	IIB1	Many rock pebbles
28	186	0.95	177	X	Terrace flat	0	Poor	Poor	Herbaceous/trees	Undisturbed	IB1	
18-20	69	0.48	33	X	Terrace flat	0	Poor	Medium	Brush	Undisturbed	IC	
---	127	0.92	116	-	Terrace slope	--	Poor	Good	Hardwood	Undisturbed	IIC1	
---	133	0.69	92	-	Upland slope	Gentle	Poor-med	Poor	---	---	---	
---	263	1.02	267	-	Upland flat	0	Medium	Medium	Herbaceous/trees	Undisturbed	---	
---	211	0.70	148	-	Upland ridge	Very steep	Good	Good	Orchard, apple	Cultivated	---	
---	158	1.02	161	-	Bottomland flat	0	Poor	Good	Herbaceous/trees	Undisturbed	---	Gravel below 10 in.
---	234+	----	---	-	Bottomland depression	0	Poor	Poor	Bare	Cultivated	---	
---	---	----	---	-	Upper slope	Gentle	Poor	Poor	---	---	ID2	
---	273+	----	---	-	Upland flat	0	Medium	Medium	Cultivated, corn	Cultivated	ID2	
---	284+	1.00	284+	-	Upper slope	Gentle	Medium	Medium	Mixed, hardwood	Undisturbed	---	
---	137	1.00	137	X	Terrace flat	0	Poor	Poor	Herbaceous	Undisturbed	IIC1	
---	134	0.98	131	-	Upper slope	Gentle	Medium	Medium	Herbaceous/trees	---	---	
---	244	1.09	264	-	Upper slope	Steep	Medium	Medium	Cultivated, oats	Cultivated	---	
---	152	1.02	154	-	Lower slope	Very gentle	Good	Poor	Herbaceous	Grazed	---	
---	176	1.03	181	-	Bottomland flat	0	Medium	Poor	Herbaceous	Cultivated	---	
---	272+	1.02	277+	-	Lower slope	0	---	---	Herbaceous	Cultivated	---	
---	300+	1.04	312+	-	Upper slope	--	---	---	Brush, trees	Undisturbed	---	
---	255	1.00	255	-	Upper slope	--	Medium	Medium	Hardwood	Undisturbed	---	
---	232+	1.09	253+	-	Upper slope	--	Good	Good	Brush	Undisturbed	---	
---	81	0.91	73	-	Upland ridge	0	Good	Medium	Brush/hardwood	Undisturbed	---	Rock pebbles
---	161	1.02	164	-	Terrace flat	0	Medium	Good	---	---	---	
---	293+	0.77	225+	-	---	Gentle	Good	Medium	Herbaceous	---	---	
---	196	1.14	224	-	Upland flat	0	Good	Poor	Herbaceous brush	Undisturbed	IVB2	
---	167	0.73	122	-	Upper slope	Gentle	Good	Medium	Pine & hardwood	Undisturbed	---	
---	134	0.75	101	-	Upper slope	Gentle	Medium	Medium	Herbaceous/pine	Logged	---	
---	145	0.75	109	-	Upper slope	Gentle	Medium	Medium	Herbaceous	Cultivated	IVA1	
---	114	1.01	115	X	Upland flat	0	Medium	Medium	Herbaceous	Undisturbed	IVA1	Near pond
---	72	1.01	73	X	Upland flat	0	Good	Good	Herbaceous	Cultivated, idle	IVA1	
---	150	1.02	153	X	Lower slope	Gentle	Good	Poor	Herbaceous/trees	Undisturbed	IVA1	
---	121	1.03	125	X	Lower slope	Gentle	Good	Good	Herbaceous	Undisturbed	---	
---	53	0.71	38	X	Upland flat	0	Medium	Medium	Herbaceous/trees	Undisturbed	---	
---	155	0.99	153	X	Lower slope	Gentle	Medium	Medium	Herbaceous/bushes	Undisturbed	---	
---	135	1.01	136	X	Bottomland depression	Gentle	Medium	Medium	Cultivated, alfalfa	Cultivated	IVA1	Near pond

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Predi

Soil Data, 0- to 12-in. Layer

Site No.	Location State	Location County or Parish	USDA Soil Map Identification Soil Series	0- to 6-in. USDA Type	Topography Class	USDA Texture by Wt, % Type	Sand	Silt	Clay	% Fines	USCS Atterberg Limits LL	PL	PI	Type	Organic Cont %	Avg Dry Density lb/cu ft	No. of Tests	Wet-Season Condition Average MC, %	CI	RI	RCI	Range MC, %	CI	RI
1B	Miss.	Warren	Loring	SiL	High	SiL	6	75	19	98	29	24	5	ML	0.84	84.9	11	26.0	150	0.41	61	24.4-29.0	107-182	0.30-0.5
1C		Warren	Loring	SiL	High	SiL	6	75	19	98	48	23	25	CL	0.62	84.9	5	27.0	246	0.60	150	25.5-28.5	198-291	0.37-0.6
2		Warren	Collins	SiL	Low	SiL	4	78	18	100	35	27	8	ML	1.24	95.5	11	26.9	219	0.56	124	25.3-28.9	180-262	0.42-0.7
4	La.	Madison	Commerce	SiC	Low	SiC	6	49	45	96	60	25	35	CH	1.82	86.2	3	34.7	152	0.85	128	33.0-37.5	126-176	0.76-0.9
6	Miss.	Warren	Collins	SiL	Low	SiL	4	79	17	96	38	26	12	ML	1.45	81.8	43	32.7	127	0.57	74	29.6-36.3	79-199	0.34-0.9
7		Warren	Memphis	SiL	High	SiL	4	80	16	100	25	24	1	ML	0.70	79.9	42	29.6	139	0.44	117	27.1-33.0	83-209	0.16-0.9
8		Warren	Memphis	SiL	High	SiL	6	72	22	98	36	23	13	CL	0.35	83.7	15	28.0	168	0.80	135	25.0-30.5	119-234	0.05-0.9
9		Jones	Wahee	SiL	High	SiL	30	61	9	77	19	17	2	ML	0.95	94.9	6	19.6	259	0.34	91	17.9-20.7	244-284	0.18-0.3
10		Jones	Stough	SiL	Low	SiL	30	57	13	76	24	18	6	CL-ML	0.83	94.9	12	24.6	146	0.34	49	22.4-26.1	123-177	0.20-0.4
12		Jones	Sawyer	SiL	Low	SiL	22	55	23	84	31	18	13	CL	0.88	86.2	13	26.5	106	0.68	71	24.7-28.6	89-117	0.51-0.8
13		Clark	Pachuta	CL	Low	C	18	36	46	83	68	23	45	CH	0.80	78.0	12	41.0	108	1.06	116	37.2-44.4	78-140	0.93-1.3
14	Ind.	Tippecanoe	Crosby	SiL	Low	SiL	9	65	26	96	38	21	17	CL	----	86.9	8	27.8	132	0.58	78	24.9-31.1	101-179	0.40-0.7
15		Tippecanoe	Brookston	C	Low	SiL	12	63	25	91	55	20	35	CH	1.88	80.8	0	----	---	----	---	---	---	---
16		Tippecanoe	Clyde	SiL	Low	SiCL	18	52	30	87	47	25	22	CL	3.47	85.0	2	29.0	125	0.77	98	27.8-30.1	108-141	0.65-0.8
17		Tippecanoe	Unclassified	SiL	Low	SiL	13	62	25	89	82	42	40	OH	6.27	----	1	119.5	101	0.32	32	119.5	101	0.32
18		Tippecanoe	Delmar	C	Low	SiCL	8	58	34	96	54	18	36	CH	----	90.1	1	27.2	180	0.77	139	27.2	180	0.77
19		Tippecanoe	Sloan	SiL	Low	SiCL	18	51	31	88	52	24	28	CH	2.75	97.7	4	23.4	137	0.84	115	22.2-24.7	119-157	0.80-0.8
20		Clay	Vigo	SiL	Low	SiL	12	68	20	91	33	21	12	CL	----	91.5	21	26.0	156	0.47	74	24.6-27.5	98-205	0.37-0.6
21		Fountain	Iva	SiL	Low	SiL	9	69	22	96	34	21	13	CL	2.29	87.3	3	26.4	164	0.42	67	26.0-27.1	143-197	0.36-0.4
22	S. Dak.	Pennington	Vale	L	Low	L	46	38	16	69	31	21	10	CL	2.87	82.5	2	14.4	173	1.35	234	13.6-15.2	172-174	1.10-1.6
23		Pennington	Orman	C	Low	C	15	36	49	93	53	25	34	CH	1.63	69.8	0	----	---	----	---	---	---	---
24		Pennington	Patent	CL	High	SiCL	14	54	32	94	37	21	16	CL	4.15	85.8	1	22.8	157	0.74	116	22.8	157	0.74
25		Pennington	Alcester	SiL	Low	L	51	40	9	60	31	24	7	OL	3.77	85.2	2	32.6	128	0.79	102	21.5-23.7	120-136	0.72-0.8
26	Nebr.	Lancaster	Wabash	SiL	Low	SiL	6	70	24	99	49	22	27	CL	3.41	79.6	8	31.1	197	0.73	197	28.4-34.7	199-213	0.67-0.8
27		Lancaster	Judson-Wabash	SiL	High	SiCL	4	63	33	99	48	22	26	CL	3.13	83.9	6	26.6	186	0.68	131	22.7-29.9	131-267	0.54-0.9
28		Lancaster	Carrington	SiC	High	SiL	12	68	20	97	34	18	16	CL	3.68	93.4	6	24.3	161	0.64	136	22.0-25.8	128-239	0.73-0.9
29		Saunders	Wabash	SiC	Low	SiCL	7	65	28	97	54	23	31	CH	4.19	78.5	6	30.2	126	0.83	105	27.0-33.0	84-174	0.68-0.9
30	S. C.	Richland	Congaree	SiL	Low	L	29	47	24	80	42	24	18	CL	0.95	91.1	23	29.2	187	0.77	145	23.7-36.0	95-278	0.59-1.2
31		Richland	Congaree	CL	Low	CL	23	47	30	88	43	23	20	CL	1.18	93.0	23	27.4	156	0.75	118	22.8-31.8	141-212	0.55-1.0
32		Richland	Flint	C	Low	C	14	29	57	91	60	26	34	CH	3.86	91.5	2	28.3	148	0.68	134	28.1-28.5	178-217	0.67-0.6
33		Richland	Flint	C	Low	C	23	36	41	88	43	19	24	CL	0.91	89.8	2	23.3	158	0.62	100	20.0-26.6	139-176	0.49-0.7
34		Union	Iredell	C	Low	C	10	20	70	92	107	25	79	CH	0.91	82.0*	12	42.1	93	1.32	118	37.1-46.6	62-193	0.76-2.0
35		Richland	Flint	SL	Low	SL	60	30	10	49	--	NP	--	SM	----	105.5	9	17.1	254	0.61	156	16.1-18.4	212-288	0.25-0.9
36	Tex.	Nacogdoches	Boswell	LS	High	CL	35	30	35	75	46	18	28	CL	0.70	80.3	--	----	---	----	---	---	---	---
37		Nacogdoches	Sawyer	L	High	L	40	44	16	68	14	NP	--	ML	0.62	86.8	--	----	---	----	---	---	---	---
38		Nacogdoches	Huckabee	SL	High	SL	60	33	9	53	16	NP	--	ML	0.18	83.7	--	----	---	----	---	---	---	---
39	Mo.	Butler	Weldon	SiL	High	SiL	14	72	15	85	28	20	8	CL	1.74	91.1	12	27.2	80	0.61	49	24.9-29.4	60-136	0.57-0.7
41	Fla.	Jackson	Maxeland	S	High	S	94	4	2	7	16	NP	--	SM	3.25	94.9	--	----	---	----	---	---	---	---
43	Pa.	Monroe	Dilldown	SL	High	SL	74	33	13	26	31	NP	--	SM	3.23	84.3	--	----	---	----	---	---	---	---
44		Monroe	Hazleton	L	High	L	39	50	11	47	--	NP	--	SM	4.15	88.7	--	----	---	----	---	---	---	---
45		Monroe	Bortle	L	High	L	50	41	21	48	28	21	8	SC	2.54	94.9	--	----	---	----	---	---	---	---
46	S. C.	Union	Cataula	C	High	C	25	29	46	77	69	37	32	MH	3.45	83.7	--	----	---	----	---	---	---	---
47		Union	Lloyd	CL	High	C	29	20	51	72	57	24	33	CH	1.74	95.5	6	21.1	264	0.75	174	18.3-23.1	167-225	0.59-0.86
48		Union	Catalpa	SL	High	C	35	23	42	66	63	28	35	CH	3.62	90.5	5	25.2	240	0.65	202	23.6-27.5	193-281	0.78-0.90
49		Union	Cataula	SL	High	CL	44	19	37	60	46	22	24	CL	1.69	100.5	--	----	---	----	---	---	---	---
50		Union	Cataula	SL	High	CL	42	24	34	62	43	24	24	CL	1.63	92.4	--	----	---	----	---	---	---	---
51	Calif.	Los Angeles	Vista-Fallbrook	SL	High	SL	65	31	4	43	21	NP	--	SM	1.42	82.4	4	17.3	82	2.89	234	15.9-18.7	68-193	1.67-4.19
52		Los Angeles	Vista-Fallbrook	SL	High	SL	64	31	5	46	27	20	7	SM-SC	----	93.0	--	----	---	----	---	---	---	---
53		Los Angeles	Vista-Fallbrook	SL	High	SL	63	32	5	46	25	22	6	SM-SC	----	96.0	--	----	---	----	---	---	---	---
54		Madera	Holland	SL	High	SL	64	27	9	45	21	16	2	SM	1.52	82.0	--	----	---	----	---	---	---	---
56		Madera	Sierra	L	High	SCL	51	28	22	44	33	24	14	CL	1.38	96.2	--	----	---	----	---	---	---	---
58	Miss.	Tallahatchie	Vaiden	CL	Low	C	36	24	40	72	63	23	40	CH	1.77	86.8	9	29.4	144	1.58	196	27.6-31.7	124-165	1.50-1.19
60	Ohio	Coshocton	Muskingum	SiL	High	L	24	44	32	63	32	20	12	CL	1.39	96.0	26	23.7	145	0.64	93	21.9-25.4	97-171	0.43-0.77
61		Coshocton	Keene	SiL	High	SiL	43	45	32	63	34	22	12	CL	1.21	99.1	21	23.1	120	0.70	94	21.3-27.6	76-175	0.49-0.88
62	Mich.	Ingham	Spinks	SL	High	L	54	33	13	47	21	NP	--	ML	0.84	----	--	----	---	----	---	---	---	---
63	Idaho	Bonner	Mantell	Pt	Low	Pt		Organic			41	27	15	Pt	----	----	--	----	---	----	---	---	---	---
64		Bonner	Mission or Cabinet	SiL	High	SiL	13	73	12	44	41	36	5	ML	1.18	91.2	--	----	94	0.66	62	---	---	---
65		Bonner	Mission or Cabinet	SiL	High	SiL	4	58	38	61	22	21	1	ML	1.21	93.7	--	----	---	----	---	--	---	---
66		Bonner	Thatuna	L	Low	SiL	21	63	16	36	34	31	3	MH	1.29	90.2	--	----	---	----	---	---	---	---
68		Bonner	Peone	SiL	Low	SiL	12	7	81	93	54	32	22	ML	1.70	94.9*	4	41.2	123	0.37	47	35.4-45.4	93-154	0.28-0.51
69	Ark.	Ashley	Leeper	SiL	Low	SiL	6	68	26	94	49	21	28	CL-ML	0.55	92.4	--	----	---	----	---	---	---	---
70		Ashley	Leeper	SiL	Low	SiL	6	74	20	94	47	21	26	CL-ML	0.42	92.4	--	----	---	----	---	---	---	---
71		Ashley	Leeper	SiL	Low	SiL	10	67	23	90	37	21	16	CL-ML	0.48	92.4	--	24.5	160	0.53	82	22.5-31.7	93-230	0.44-0.90
72		Ashley	Leeper	SiL	Low	SiL	4	73	23	96	40	22	18	ML	0.79	90.7	8	28.4	164	0.58	96	24.9-28.4	114-215	0.44-0.24
74		Ashley	Leeper	SiL	Low	SiL	7	72	21	93	37	21	16	ML	0.69	94.9	4	31.9	131	0.58	92	27.2-33.2	83-190	0.54-0.48
75		Ashley	Myatt	SiL	Low	SiL	42	43	15	58	29	NP	--	ML	0.59	99.5	--	----	---	----	---	---	---	---
76	N. Mex.	Bernalillo	Chilasse.fine	SiL	High	SiL	22	54	24	42	27	22	5	CL	2.33	94.4	4	23.8	130	0.78	113	21.8-26.3	96-223	0.67-0.93
77		Bernalillo	Chilasse.fine	L	High	L	37	34	29	59	34	17	17	CL	0.85	96.5	4	22.2	131	0.57	122	22.2	210	0.87
82		Bernalillo	Chilasse.fine	SL	High	SCL	47	43	10	47	27	17	10	CL	0.52	96.4	--	----	---	----	---	---	---	---
83		Bernalillo	Chilasse.fine	SiL	High	SiL	17	57	26	75	43	22	21	CL	1.65	94.4††	††	21.7††	217††	0.84††	182††	17.4-22.9	117-184	0.78-1.65
85		Sandoval	Chilasse.fine	SL	High	SiL	31	47	22	42	22	17	5	SM-SC	1.78	98.5	--	----	---	----	---	---	---	---
87	Ariz.	Oneida	Spencer	SiL	Low	SiL	20	72	8	92	47	22	25	ML	0.78	94.5	4	35.4	123	0.28	32	33.1	123	0.26
89		Oneida	Spencer	SiL	Low	SiL	22	72	6	92	45	24	21	ML	0.88	98.7	1	34.5	107	0.28	31	33.5	107	0.40
90		Oneida	Vilas	L	Low	L	74	21	5	31	21	NP	--	SM-SM	1.49	94.4	--	----	---	----	---	---	---	---
92		Oneida	Vilas	L	High	L	63	31	6	43	24	NP	--	SM-SM	1.79	92.3	--	----	---	----	---	---	---	---
92		Oneida	Peat	Pt	Low	Pt		Organic			--	--	--	Pt	----	16.9	--	----	---	----	---	---	---	---
93		Oneida	Peat	Pt	Low	Pt		Organic			--	--	--	Pt	----	13.7	--	----	---	----	---	---	---	---
94		Oneida	Kerman	SL	High	SL	54	41	5	41	31	NP	--	SM	1.69	94.9	--	----	---	----	---	---	---	---
95		Oneida	Antigo	SiL	High	SiL	37	57	6	76	22	19	3	ML	1.31	97.4	3	23.5	190	0.41	78	22.4-24.2	145-231	0.38-0.46
96		Oneida	Antigo	SiL	High	SiL	48	47	5	64	21	16	4	CL-ML	1.78	94.5	1	21.1	200	0.29	58	21.1	200	0.29
97		Oneida	Spencer	SiL	Low	SiL	25	69	6	96	25	21	4	CL-ML	1.66	92.4*	2	25.7	142	0.36	50	25.4-29.1	132-149	0.35-0.38
98		Oneida	Spencer	SiL	Low	SiL	24	69	7	93	28	22	6	ML	1.51	96.8	2	28.5	144	0.24	34	27.4-29.2	138-149	0.22-0.26
99		Oneida	Spencer	SiL	Low	SiL	24	68	8	92	21	20	1	ML	1.42	91.8	--	----	---	----	---	---	---	---
100		Oneida	Peat	Pt	Low	Pt		Organic			63	36	27	Pt	----	13.1	--	----	---	----	---	---	---	---
111		Oneida	Superior	L	High	CL	30	37	33	76	45	19	26	CL	0.41	86.0	5	25.6	135	0.42	124	23.2-29.5	117-147	0.64-1.05
112		Oneida	Superior	SL	High	SL	64	34	2	43	27	25	2	SM	1.29	92.-	4	23.-	226	0.39	91	23.1-26.-	168-257	0.39-0.53

* Questionable value, not used in analysis.
†† Data from site in arii area, not used in analysis.

Table B3

Prediction-Development Site Data

Soil Data, 0- to 12-in. Layer

Avg Dry Density lb/cu ft	Wet-Season Condition: No. of Tests	Average: MC, %	Average: CI	Average: RI	Average: RCI	Range: MC, %	Range: CI	Range: RI	Range: RCI	Moisture Content, %, at: Atmos Tension 0.005	Atmos Tension 0.06	Field Max	Field Min	% Sat. at Field Max	High-Moisture Condition, At Lowest Rating Cone Index: Depth to Water Table in.	Dry Density lb/cu ft	MC, %	% Sat.	CI	RI	Lowest RCI	Site Environmental Data: Topographic Position	Slope, %	Drainage: Surface	Drainage: Internal	Vege
84.9	11	26.0	150	0.41	61	24.4-29.0	107-182	0.30-0.55	42-81	32.7	27.1	28.6	6.0	---	--	---	----	---	---	----	---	Upland upper slope	10	Good	Medium	Herbaceous
84.9	5	27.0	246	0.60	150	25.5-28.5	198-291	0.37-0.68	73-198	32.7	27.1	----	----	---	--	---	----	---	---	----	---	Upland upper slope	10	Good	Medium	Herbaceous
95.5	11	26.9	219	0.56	124	25.3-28.9	180-262	0.42-0.70	86-173	34.8*	32.3*	26.5	9.8	96	45	89.4	28.5	89	180	0.48	86	Bottomland flat	0	Medium	Medium	Herbaceous
86.2	3	34.7	152	0.85	128	33.0-37.5	126-176	0.76-0.97	116-146	36.2	34.0	34.4	17.6	97	11	---	33.0	---	153	0.76	116	Bottomland flat	0	Medium	Poor	Herbaceous
81.8	43	32.7	127	0.57	74	29.6-36.3	79-199	0.34-0.41	30-181	35.6	31.8	35.4	11.1	92	18	84.9	33.7	94	89	0.34	30	Bottomland flat	0	Medium	Medium	Herbaceous
79.9	42	29.6	139	0.44	117	27.1-33.0	83-209	0.16-0.96	18-110	30.3	29.1	31.5	5.3	---	--	---	----	---	---	----	---	Upland ridge	5	Good	Good	Hardwood
83.7	15	28.0	168	0.80	135	25.0-30.5	119-234	0.05-0.95	79-173	30.5	29.0	27.2	12.2	---	--	---	----	---	---	----	---	Upland ridge	12	Good	Good	Pine
94.9	6	19.6	259	0.34	91	17.9-20.7	244-284	0.18-0.52	44-141	29.6	23.2	20.6	5.5	---	--	---	----	---	---	----	---	Terrace upper slope	0	Medium	Poor	Herbaceous/
94.9	12	24.6	146	0.34	49	22.4-26.1	123-177	0.20-0.48	33-60	34.3*	26.6	27.3	4.6	97	0	---	24.2	---	164	0.20	33	Terrace lower slope	5	Poor	Poor	Herbaceous/
86.2	13	26.5	106	0.68	71	24.7-28.6	89-117	0.51-0.83	53-84	33.2	26.3	27.8	8.1	80	9	---	28.6	---	104	0.51	53	Upland lower slope	5	Medium	Poor	Herbaceous/
78.0	12	41.0	108	1.06	116	37.2-44.4	78-140	0.93-1.36	72-190	37.4*	34.2	41.7	24.3	97	1	---	42.2	---	78	0.93	72	Upland flat	0	Poor	Poor	Herbaceous
86.9	8	27.8	132	0.58	78	24.9-31.1	101-179	0.40-0.72	44-122	---	---	28.6	11.0	84	5	90.0	31.1	98	101	0.44	44	Upland upper slope	Very gentle	Poor	Poor	Herbaceous
80.8	0	----	---	----	---	---	---	---	---	---	---	33.8	----	84	--	---	----	---	---	----	---	Upland terrace slope	0	Poor	Poor	Herbaceous
85.0	2	29.0	125	0.77	98	27.8-30.1	108-141	0.65-0.89	70-126	---	---	30.1	12.7	84	20	89.9	30.1	95	108	0.65	70	Upland terrace slope	0	Poor	Poor	Herbaceous
----	1	119.5	101	0.32	32	119.5	101	0.32	32	---	---	----	----	---	--	---	----	---	---	----	---	Bottomland flat	Very gentle	Poor	Poor	Bare
90.1	1	27.2	180	0.77	139	27.2	180	0.77	139	---	---	30.9	15.4	96	--	---	----	---	---	----	---	Upland upper slope	Gentle	---	---	Herbaceous
97.7	4	23.4	137	0.84	115	22.2-24.7	119-157	0.80-0.88	101-138	---	---	26.5	----	96	16	103.0	23.8	98	126	0.80	101	Bot. terrace slope	0	Poor	Poor	Herbaceous
91.5	21	26.0	156	0.47	74	24.6-27.5	98-205	0.37-0.61	37-123	---	---	27.6	11.0	91	0	96.1	26.1	96	103	0.36	37	Upland upper slope	0	Poor	Poor	Herbaceous
87.3	3	26.4	164	0.42	67	26.0-27.1	143-197	0.36-0.49	61-71	---	---	26.8	11.2	79	--	94.9	26.0	93	152	0.40	61	Upland upper slope	Gentle	Medium	Poor	Herbaceous
82.5	2	14.4	173	1.35	234	13.6-15.2	172-174	1.10-1.60	189-278	---	---	32.8	7.6	87	--	---	----	---	---	----	---	Terrace upper slope	0	Medium	Medium	Herbaceous
89.8	0	----	---	----	---	---	---	---	---	---	---	31.3	13.9	96	--	---	----	---	---	----	---	Terrace upper slope	Gentle	Poor	Poor	Herbaceous
85.8	1	22.8	157	0.74	116	22.8	157	0.74	116	---	---	27.9	9.7	---	--	---	----	---	---	----	---	Upland upper slope	0	Good	Medium	Herbaceous
85.2	2	22.6	128	0.79	102	21.5-23.7	120-136	0.72-0.86	86-117	---	---	28.1	4.9	---	--	---	----	---	---	----	---	Upland upper slope	Gentle	Medium	Medium	Herbaceous
79.6	8	31.1	117	0.73	147	28.4-34.7	109-213	0.67-0.84	73-153	---	---	34.0	14.4	84	47	83.7	34.3	93	109	0.67	73	Bot. terrace slope	0	Poor	Poor	Herbaceous
83.9	6	26.6	186	0.68	131	22.7-29.9	131-267	0.54-0.90	72-240	---	---	31.0	9.9	---	--	---	----	---	---	----	---	Upland upper slope	0	Good	Good	Herbaceous
93.4	6	24.3	161	0.84	139	22.0-25.8	128-239	0.73-0.97	100-215	---	---	26.7	16.0	---	--	---	----	---	---	----	---	Upland upper slope	0	---	---	Herbaceous
73.5	6	30.2	126	0.83	105	27.0-33.0	84-174	0.68-0.94	57-150	---	---	35.8	11.9	84	>48	85.6	32.6	91	84	0.68	57	Bot. terrace slope	0	---	---	Herbaceous
91.1	23	29.2	157	.77	145	23.7-36.0	95-278	0.59-1.20	65-234	---	---	29.7	----	95	--	83.4	36.0	97	95	0.68	65	Bot. terrace slope	0	Medium	Medium	Herbaceous
93.0	23	27.4	156	.75	118	22.8-31.8	141-212	0.55-1.02	78-199	---	---	28.0	----	92	>48	93.0	24.5*	83*	141	0.55	78	Bot. terrace slope	Gentle	Medium	Medium	Herbaceous
91.5	2	28.3	145	.68	134	28.1-28.5	178-217	0.67-0.68	114-148	---	---	30.7	----	98	--	---	----	---	---	----	---	Upland upper slope	Gentle	Poor	Poor	Herbaceous
89.8	2	23.3	156	0.62	100	20.0-26.6	137-176	0.49-0.75	68-132	---	---	27.4	----	86	--	95.0	26.6	95	139	0.49	63	Upland upper slope	0	Poor	Poor	Herbaceous
82.0*	12	42.1	93	1.32	118	37.1-46.6	62-193	0.76-2.01	62-232	---	---	41.9*	----	107*	--	---	46.5	---	81	0.76	62	Upland upper slope	0	Poor	Poor	Herbaceous
105.5	9	17.1	284	.61	166	16.1-18.4	212-298	0.25-0.96	62-224	---	---	17.8	----	83	--	68.3	17.5	86	246	0.25	62	Upland upper slope	0	Poor	Poor	Herbaceous
80.3	--	----	---	----	---	---	---	---	---	---	---	23.3	11.2	---	--	---	----	---	---	----	---	Upland upper slope	14	Good	Medium	Mixed, pine
86.8	--	----	---	----	---	---	---	---	---	28.8	22.3	19.7	5.4	---	--	---	----	---	---	----	---	Upland lower slope	8	Medium	Medium	Mixed, pine
83.7	--	----	---	----	---	---	---	---	---	33.4	23.0	19.4	1.7	---	--	---	----	---	---	----	---	Terrace upper slope	6	Good	Good	Mixed, pine
91.1	12	27.2	80	.61	49	24.4-29.4	60-106	0.57-0.70	36-69	33.9	28.1	27.2	7.3	---	--	---	----	---	---	----	---	Upland ridge	5	Good	Medium	Hardwood
94.9	--	----	---	----	---	---	---	---	---	26.0	6.2	7.4	1.4	---	--	---	----	---	---	----	---	Upland lower slope	0	Good	Good	Herbaceous/
84.3	--	----	---	----	---	---	---	---	---	---	43.1	24.5	14.7	---	--	---	----	---	---	----	---	Upland upper slope	16	Good	Good	Scrub oak/t
88.7	--	----	---	----	---	---	---	---	---	---	36.2	38.3	30.5	---	--	---	----	---	---	----	---	Upland flat	0	Good	Good	Scrub oak/t
94.9	--	----	---	----	---	---	---	---	---	---	34.3	34.4	21.5	---	--	---	----	---	---	----	---	Upland upper slope	5	Good	Good	Scrub oak
88.7	--	----	---	----	---	---	---	---	---	---	27.2	28.4	21.4	---	--	---	----	---	---	----	---	Upland upper slope	4	Medium	Medium	Bare
90.5	6	21.1	234	.73	154	18.3-23.1	167-225	0.59-0.86	110-151	---	25.5	22.8	12.2	---	--	---	----	---	---	----	---	Upland upper slope	0	Medium	Medium	Herbaceous
90.5	5	25.2	244	.85	208	23.--27.9	193-281	0.78-0.90	172-224	---	43.1	36.8	17.3	---	--	---	----	---	---	----	---	Upland upper slope	0	Medium	Medium	Pine
100.5	--	----	---	----	---	---	---	---	---	---	21.4	12.6	---	---	--	---	----	---	---	----	---	Upland upper slope	0	Medium	Medium	Pine
92.4	--	----	---	----	---	---	---	---	---	---	22.1	23.5	14.2	---	--	---	----	---	---	----	---	Upland upper slope	4	Medium	Medium	Pine
82.4	4	17.3	52	2.89	234	15.4-18.7	66-105	1.67-4.15	114-300+	---	17.1	14.7	5.2	---	--	---	----	---	---	----	---	Upland upper slope	35	Good	Good	Hardwood
98.0	--	----	---	----	---	---	---	---	---	---	14.0	18.4	3.0	---	--	---	----	---	---	----	---	Upland ridge	20	Good	Good	Bare
96.8	--	----	---	----	---	---	---	---	---	---	18.0	27.3	4.9	---	--	---	----	---	---	----	---	Upland flat	0	Good	Good	Sunflower
81.8	--	----	---	----	---	---	---	---	---	---	15.4	27.4	3.8	---	--	---	----	---	---	----	---	Upland upper slope	32	Good	Good	Mixed, pine
86.2	--	----	---	----	---	---	---	---	---	---	23.1	30.2	8.2	---	--	---	----	---	---	----	---	Upland upper slope	40	Good	Good	Pine
86.8	5	23.4	144	1.18	156	21.--25.7	124-165	1.10-1.29	133-178	42.0	37.2	34.2	13.5	92	--	---	----	---	---	----	---	Upland upper slope	6	Medium	Poor	Herbaceous
90.0	26	23.4	149	.64	93	21.4-25.4	97-171	0.43-0.77	66-132	---	---	----	----	---	--	---	----	---	---	----	---	---	--	---	---	
88.6	22	25.4	126	.72	94	23.3-27.6	96-175	0.49-1.34	58-124	---	---	----	----	---	--	---	----	---	---	----	---	---	--	---	---	
----	--	----	---	----	---	---	---	---	---	---	---	----	----	---	--	---	----	---	---	----	---	---	--	---	---	
94.4	--	----	---	----	---	---	---	---	---	26.0*	21.1*	----	----	---	--	---	----	---	---	----	---	Upland depression	0	Poor	Poor	Herbaceous
41.2	--	----	44	.06	61	---	---	---	---	34.0	---	71.9	17.8	---	--	---	----	---	---	----	---	Terrace flat	0	Good	Good	Pine & cott
43.7	--	----	---	----	---	---	---	---	---	40.1	41.1	46.2	15.8	---	--	---	----	---	---	----	---	Terrace flat	0	Good	Good	Pine, fir,
60.2	--	----	---	----	---	---	---	---	---	43.2	37.3	38.0	12.4	96	--	---	----	---	---	----	---	Bottomland flat	0	Medium	Medium	Pine, larch
64.4*	4	46.2	123	.37	47	35.4-54.4	49-154	0.23-0.81	17-73	51.0*	49.2	52.5	22.8	1.2*	--	---	----	---	---	----	---	Terrace flat	0	Poor	Poor	Bare
91.1	--	----	---	----	---	---	---	---	---	25.8	26.1	25.8	6.1	91	--	---	----	---	---	----	---	Terrace flat	0	Poor	Poor	Pine/hardwo
92.1	--	----	---	----	---	---	---	---	---	24.7	24.5	27.1	10.2	92	--	---	----	---	---	----	---	Terrace flat	0	Poor	Poor	Bare
91.1	10	24.8	244	.63	152	22.1-31.7	44-270	0.14-1.14	14-168	31.1	27.2	27.7	9.4	4	--	---	24.1	---	44	0.14	24	Terrace flat	0	Poor	Poor	Pine & hard
88.7	9	28.4	158	.58	90	26.4-28.4	114-213	0.14-0.24	17-91	31.0	24.4	28.8	5.6	92	--	---	28.4	---	114	0.14	17	Terrace flat	0	Poor	Poor	Herbaceous
84.9	4	34.4	118	.48	42	27.4-39.2	63-156	0.34-0.48	22-48	38.1	34.3	39.2	9.7	98	--	---	33.6	---	65	0.34	22	Bottomland flat	0	Medium	Poor	Hardwood
99.3	--	----	---	----	---	---	---	---	---	24.-	17.8	16.7	3.4	67	--	---	----	---	---	----	---	Terrace depression	0	Poor	Poor	Pine & hard
96.9	4	21.8	53	.76	38	21.8-22.3	84-223	0.67-0.85	53-207	24.4	20.7	24.1	5.4	---	--	---	----	---	---	----	---	Upland upper slope	5	Good	Good	Herbaceous
97.5	4	22.2	63	.67	121	22.2	139	0.57	121	28.1	23.5	22.4	4.7	---	--	---	----	---	---	----	---	Upland lower slope	6	Good	Good	Herbaceous
123.0	--	----	---	----	---	---	---	---	---	11.0	14.0	14.3	3.7	---	--	---	----	---	---	----	---	Terrace flat	0	Good	Medium	Herbaceous
94.0ff	10	21.1ff	1.7ff	1.03ff	196ff	17.4-22.7	117-154	1.03-1.03	114-138	24.3	23.0	21.0	14.0	---	--	---	----	---	---	----	---	Bottomland flat	0	Poor	Poor	Herbaceous
96.3	--	----	---	----	---	---	---	---	---	23.4	22.1	22.-	9.7	---	--	---	----	---	---	----	---	Upland upper slope	7	Good	Good	Herbaceous/
79.3	-	31.-	46	.48	32	31.-	42	0.20	32	37.4	34.3	36.3	16.7	97	--	---	31.-	---	123	0.20	32	Upland flat	0	Medium	Poor	Bare
66.7	-	31.3	47	.48	32	31.3	169	0.43	81	34.4	34.3	27.9	11.7	96	--	---	30.3	---	169	0.48	81	Upland flat	0	Medium	Poor	Aspen fores
94.4	--	----	---	----	---	---	---	---	---	23.2	11.-	13.3	5.8	42	--	---	----	---	---	----	---	Upland lower slope	4	Medium	Poor	Pine/aspen
89.3	--	----	---	----	---	---	---	---	---	28.6	23.2	----	----	---	--	---	----	---	---	----	---	Upland upper slope	9	Good	Good	Pine/aspen
16.9	--	----	---	----	---	---	---	---	---	30.3	21.7	----	----	---	--	---	----	---	---	----	---	Bottomland depression	0	Poor	Poor	Black spru
13.7	--	----	---	----	---	---	---	---	---	63.6	63.2	----	----	---	--	---	----	---	---	----	---	Bottomland depression	0	Poor	Poor	Black spru moss
94.9	--	----	---	----	---	---	---	---	---	25.6	22.6	14.5	5.3	---	--	---	----	---	---	----	---	Upland upper slope	4	Good	Good	Herbaceous
87.4	5	23.-	14	.41	78	22.4-24.2	145-214	0.38-0.46	58-96	31.0	27.6	23.3	4.5	---	--	---	----	---	---	----	---	Upland flat	0	Medium	Good	Herbaceous
85.5	4	22.-	20	.42	58	21.1	200	0.29	58	34.1	31.2	25.6	10.8	---	--	---	----	---	---	----	---	Upland flat	0	Medium	Good	Aspen
82.4*	2	25.7	142	.36	50	25.4-26.1	132-143	0.35-0.38	48-51	34.3	31.4	31.3	11.2	97*	--	---	----	---	---	----	---	Upland flat	0	Medium	Poor	Aspen
76.8	2	25.5	144	.24	34	24.4-26.2	138-149	0.22-0.26	33-36	37.7	34.-	33.3	14.3	76	--	---	----	---	---	----	---	Upland flat	0	Medium	Poor	Herbaceous
101.8	--	----	---	----	---	---	---	---	---	24.-	23.7	----	----	---	--	---	----	---	---	----	---	Terrace depression	0	Poor	Poor	Herbaceous
13.1	--	----	---	----	---	---	---	---	---	64.3	64.-	----	----	---	--	---	----	---	---	----	---	Bottomland depression	0	Poor	Poor	Herbaceous
86.6	3	23.3	.35	.32	124	22.2-23.3	137-147	0.84-1.05	84-130	---	---	----	----	---	--	---	----	---	---	----	---	Upland slope	5	Poor	Poor	Herbaceous
92.-	4	23.-	226	.39	91	23.1-24.-	160-297	0.39-0.53	48-130	---	---	----	----	---	--	---	----	---	---	----	---	Upland slope	4	Medium	Medium	Herbaceous

(Continued)

Table B3

Prediction-Development Site Data

Range RI	RCI	Moisture Content, %, at Atmos Tension C.005	Atmos Tension 0.06	Field Max	Field Min	% Sat. at Field Max	High-Moisture Condition: At Lowest Rating Cone Index: Depth to Water Table in.	Dry Density lb/cu ft	MC, %	% Sat.	CI	RI	Lowest RCI	Site Environmental Data: Topographic Position	Slope, %	Drainage: Surface	Drainage: Internal	Vegetation	Land Use	Eng. Conf. Land Form
0.30-0.55	42-81	32.7	27.1	28.6	6.0	---	-	---	----	---	---	----	---	Upland upper slope	10	Good	Medium	Herbaceous	Hay	IIIA
0.37-0.68	73-198	32.7	27.1	----	----	---	--	---	----	---	---	----	---	Upland upper slope	10	Good	Medium	Herbaceous	Hay	IIIA
0.42-0.70	86-173	34.8*	32.3*	26.5	9.8	96	45	89.4	28.5	89	180	0.48	86	Bottomland flat	0	Medium	Medium	Herbaceous	Hay	IIB1
0.76-0.97	116-146	36.2	34.0	34.4	17.6	97	11	---	33.0	---	153	0.76	116	Bottomland flat	0	Medium	Poor	Herbaceous	Grazed	IIB2
0.34-0.91	30-181	35.6	31.8	35.4	11.1	92	18	84.9	33.7	94	89	0.34	30	Bottomland flat	0	Medium	Medium	Herbaceous	Hay	VF
0.16-0.96	18-110	30.3	29.1	31.5	5.3	---	--	---	----	---	---	----	---	Upland ridge	5	Good	Good	Hardwood	Undisturbed	IIIA
0.05-0.95	79-173	30.5	29.0	27.2	12.2	---	--	---	----	---	---	----	---	Upland ridge	12	Good	Good	Pine	Eroded woodland pasture	IIIA
0.18-0.52	44-141	29.6	23.2	20.6	5.5	---	--	---	----	---	---	----	---	Terrace upper slope	0	Medium	Poor	Herbaceous/trees	Grazed	IIC1
0.20-0.48	33-60	34.3*	26.6	27.3	4.6	97	0	---	24.2	---	164	0.20	33	Terrace lower slope	5	Poor	Poor	Herbaceous/trees	Grazed	IIC1
0.51-0.63	53-84	33.2	26.3	27.8	8.1	80	9	---	28.6	---	104	0.51	53	Upland lower slope	5	Medium	Poor	Herbaceous/cutover	Logged	IVC3
0.93-1.36	72-190	37.4*	34.2	41.7	24.3	97	1	---	42.2	---	78	0.93	72	Upland flat	0	Poor	Poor	Herbaceous	Grazed	IVC1
0.40-0.72	44-122	---	---	28.6	11.0	84	5	90.6	31.1	98	101	0.44	44	Upland upper slope	Very gentle	Poor	Poor	Herbaceous	Cultivated, idle	ID2b
---	---	---	---	33.8	----	84	--	---	----	---	---	----	---	Upland terrace slope	0	Poor	Poor	Herbaceous	---	ID2b
0.65-0.89	70-126	---	---	30.1	12.7	84	20	89.9	30.1	95	108	0.65	70	Upland terrace slope	0	Poor	Poor	Herbaceous	---	ID2b
0.32	32	---	---	----	----	---	--	---	----	---	---	----	---	Bottomland flat	Very gentle	Poor	Poor	Bare	---	VC2
0.77	139	---	---	30.9	15.4	96	--	---	----	---	---	----	---	Upland upper slope	Gentle	---	---	Herbaceous	---	ID2b
0.80-0.88	101-138	---	---	26.5	----	98	16	103.0	23.8	98	126	0.80	101	Bot. terrace slope	0	Poor	Poor	Herbaceous	---	IIB1
0.37-0.61	37-123	---	---	27.6	11.0	91	0	96.1	26.1	9[illegible]	103	0.36	37	Upland upper slope	0	Poor	Poor	Herbaceous	---	ID2a
0.36-0.49	61-71	---	---	26.8	11.2	79	--	94.9	26.0	93	152	0.40	61	Upland upper slope	Gentle	Medium	Poor	Herbaceous	---	IIIA
1.10-1.60	189-278	---	---	32.8	7.6	87	--	---	----	---	---	----	---	Terrace upper slope	0	Medium	Medium	Herbaceous	---	IIB1
---	---	---	---	31.3	13.9	96	--	---	----	---	---	----	---	Terrace upper slope	Gentle	Poor	Poor	Herbaceous	---	IIC1
0.74	116	---	---	27.9	9.7	---	--	---	----	---	---	----	---	Upland upper slope	0	Good	Medium	Herbaceous	---	----
0.72-0.86	86-117	---	---	28.1	4.9	---	--	---	----	---	---	----	---	Upland upper slope	Gentle	Medium	Medium	Herbaceous	---	----
0.67-0.84	73-153	---	---	34.0	14.4	84	47	83.7	34.3	93	109	0.67	73	Bot. terrace slope	0	Poor	Poor	Herbaceous	---	IIB1
0.54-0.90	72-240	---	---	31.0	9.9	---	--	---	----	---	---	----	---	Upland upper slope	0	Good	Good	Herbaceous	Grazed	IIB1
0.73-0.97	100-215	---	---	26.7	10.0	---	--	---	----	---	---	----	---	Upland upper slope	0	---	---	Herbaceous	---	IIB1
0.68-0.94	57-150	---	---	35.8	11.9	84	>58	85.6	32.6	91	84	0.68	57	Bot. terrace slope	0	---	---	Herbaceous	---	IIB1
0.59-1.20	65-284	---	---	29.7	----	95	--	83.4	36.0	97	95	0.68	65	Bot. terrace slope	0	Medium	Medium	Herbaceous	---	IIE4
0.55-1.02	78-199	---	---	28.0	----	95	>48	93.0	24.5*	83*	141	0.55	78	Bot. terrace slope	Gentle	Medium	Medium	Herbaceous	---	IIE4
0.67-0.68	119-146	---	---	30.7	----	98	--	---	----	---	---	----	---	Upland upper slope	Gentle	Poor	Poor	Herbaceous	---	IIE4
0.49-0.75	68-132	---	---	27.4	----	86	--	95.0	26.6	95	139	0.49	68	Upland upper slope	0	Poor	Poor	Herbaceous	---	IIE4
0.76-2.01	62-232	---	---	41.7*	----	107*	--	---	46.0	---	81	0.76	62	Upland upper slope	0	Poor	Poor	Herbaceous	---	IVB2
0.25-0.96	62-224	---	---	17.8	----	83	--	68.3	17.5	88	246	0.25	62	Upland upper slope	0	Poor	Poor	Herbaceous	---	IIE4
---	---	---	---	23.3	11.2	---	--	---	----	---	---	----	---	Upland upper slope	14	Good	Medium	Mixed, pine & hardwood	Undisturbed	IVC3
---	---	28.8	22.3	19.7	5.4	---	--	---	----	---	---	----	---	Upland lower slope	8	Medium	Medium	Mixed, pine & hardwood	Undisturbed	IVC3
---	---	35.4	23.0	19.4	1.7	---	--	---	----	---	---	----	---	Terrace upper slope	6	Good	Good	Mixed, pine & hardwood	Undisturbed	IVC1
.57-0.70	36-69	33.9	28.1	27.2	7.3	---	--	---	----	---	---	----	---	Upland ridge	5	Good	Medium	Hardwood	Undisturbed	IIIA
---	---	26.0	6.1	7.4	1.4	---	--	---	----	---	---	----	---	Upland lower slope	0	Good	Good	Herbaceous/scrub oak	Undisturbed	IVC2
---	---	---	43.1	24.[illegible]	14.9	---	--	---	----	---	---	----	---	Upland upper slope	16	Good	Good	Scrub oak/understory	Undisturbed	IVA5
---	---	---	36.2	33.3	30.5	---	--	---	----	---	---	----	---	Upland flat	0	Good	Good	Scrub oak/understory	Undisturbed	IVA5
---	---	---	34.3	34.4	21.5	---	--	---	----	---	---	----	---	Upland upper slope	5	Good	Good	Scrub oak	Undisturbed	IVA5
---	---	---	29.2	28.4	21.4	---	--	---	----	---	---	----	---	Upland upper slope	4	Medium	Medium	Bare	Eroded farmland	IVB2
.59-0.86	110-181	---	25.5	22.8	12.2	---	--	---	----	---	---	----	---	Upland upper slope	0	Medium	Medium	Herbaceous	Idle	IVB2
.78-0.99	172-224	---	43.1	38.6	17.9	---	--	---	----	---	---	----	---	Upland upper slope	0	Medium	Medium	Pine	Undisturbed	IVB2
---	---	---	---	21.4	12.6	---	--	---	----	---	---	----	---	Upland upper slope	0	Medium	Medium	Pine	Undisturbed	IVB2
---	---	---	22.1	23.5	14.2	---	--	---	----	---	---	----	---	Upland upper slope	4	Medium	Medium	Pine	Undisturbed	IVB2
.67-4.15	114-300+	---	17.8	17.7	5.0	---	--	---	----	---	---	----	---	Upland upper slope	35	Good	Good	Hardwood	Undisturbed	IVB2
---	---	---	24.0	18.9	5.5	---	--	---	----	---	---	----	---	Upland ridge	20	Good	Good	Bare	Bare	IVB2
---	---	---	18.0	27.3	7.7	---	--	---	----	---	---	----	---	Upland flat	0	Good	Good	Sunflower	Experimental plot	IVB2
---	---	---	15.4	27.4	5.5	---	--	---	----	---	---	----	---	Upland upper slope	32	Good	Good	Mixed, pine & hardwood	Undisturbed	IVB2
---	---	---	23.1	30.2	5.2	---	--	---	----	---	---	----	---	Upland upper slope	40	Good	Good	Pine	Undisturbed	IVB2
.00-1.15	133-178	42.0	37.2	34.2	13.5	98	--	---	----	---	---	----	---	Upland upper slope	6	Medium	Poor	Herbaceous	Undisturbed	IVC1
.43-0.77	68-132	---	---	----	----	---	--	---	----	---	---	----	---	---	--	---	---	---	---	----
.45-0.54	56-124	---	---	----	----	---	--	---	----	---	---	----	---	---	--	---	---	---	---	----
---	---	---	---	----	----	---	--	---	----	---	---	----	---	---	--	---	---	---	---	----
---	---	66.[illegible]	61.[illegible]	----	----	---	--	---	----	---	---	----	---	Upland depression	0	Poor	Poor	Herbaceous	Hay	VC2
---	---	84.0	---	71.5	19.2	---	--	---	----	---	---	----	---	Terrace flat	0	Good	Good	Pine & cottonwood	Undisturbed	IIH
---	---	79.1	61.1	66.2	18.5	---	--	---	----	---	---	----	---	Terrace flat	0	Good	Good	Pine, fir, & hemlock	Undisturbed	IIB1
---	---	49.2	37.5	35.2	12.4	---	--	---	----	---	---	----	---	Bottomland flat	0	Medium	Medium	Pine, larch	Undisturbed	IIB1
20-0.51	19-73	65.[illegible]*	58.[illegible]	52.5	22.5	1.2*	--	---	----	---	---	----	---	Terrace flat	0	Poor	Poor	Bare	Bare	IIB1
---	---	28.5	26.[illegible]	26.[illegible]	6.[illegible]	---	--	---	----	---	---	----	---	Terrace flat	0	Poor	Poor	Pine, hardwood underbrush	Undisturbed	IIC1
---	---	24.7	20.5	27.[illegible]	11.2	92	--	---	----	---	---	----	---	Terrace flat	0	Poor	Poor	Bare	Bare	IIC1
14-0.34	14-106	3[illegible]	27.2	27.7	5.[illegible]	[illegible]	--	---	3[illegible]	---	[illegible]	.[illegible]	14	Terrace flat	0	Poor	Poor	Pine & hardwood	Undisturbed	IIC1
11-0.24	17-51	32.[illegible]	24.[illegible]	25.[illegible]	3.[illegible]	96	--	---	25.[illegible]	---	.[illegible]	.[illegible]	17	Terrace flat		Poor	Poor	Herbaceous	Grazed	IIC1
34-0.42	22-[illegible]	32.[illegible]	29.[illegible]	30.2	5.[illegible]	[illegible]	--	---	33.[illegible]	---	[illegible]	.[illegible]	22	Bottomland flat		Medium	Poor	Hardwood	Undisturbed	IIB1
---	---	29.[illegible]	27.[illegible]	28.[illegible]	3.[illegible]	[illegible]	--	---	----	---	---	----	---	Terrace depression	0	Poor	Poor	Pine & hardwood	Undisturbed	IIC1
67-0.[illegible]	57-[illegible]	24.[illegible]	25.[illegible]	24.[illegible]	9.[illegible]	---	--	---	----	---	---	----	---	Upland upper slope	[illegible]	Good	Good	Herbaceous	Grazed	IVA1
0.87	42	25.[illegible]	25.[illegible]	22.[illegible]	5.[illegible]	---	--	---	----	---	---	----	---	Upland lower slope	6	Good	Good	Herbaceous	Grazed	IVA5
---	---	22.[illegible]	19.[illegible]	19.[illegible]	5.[illegible]	---	--	---	----	---	---	----	---	Terrace flat	[illegible]	Good	Medium	Herbaceous	Grazed	IIC1
38-0.55	42-[illegible]	24.[illegible]	23.2	23.[illegible]	14.[illegible]	---	--	---	----	---	---	----	---	Bottomland flat	[illegible]	Poor	Poor	Herbaceous	Grazed	IIB1
---	---	23.[illegible]	22.[illegible]	22.[illegible]	9.[illegible]	---	--	---	----	---	---	----	---	Upland upper slope	[illegible]	Good	Good	Herbaceous, sparse	Grazed	IVB1
0.26	32	37.4	32.0	30.[illegible]	26.[illegible]	[illegible]	--	---	35.[illegible]	---	123	.26	32	Upland flat	[illegible]	Medium	Poor	Bare	Bare	ID2b
0.48	81	34.[illegible]	31.[illegible]	26.[illegible]	11.[illegible]	[illegible]	--	---	3[illegible]	---	169	.48	81	Upland flat	0	Medium	Poor	Aspen forest	Undisturbed	ID2b
---	---	23.2	11.[illegible]	15.[illegible]	[illegible]	[illegible]	--	---	----	---	---	----	---	Upland lower slope	[illegible]	Medium	Poor	Pine, aspen	Undisturbed	ID2c
---	---	25.[illegible]	13.2	----	----	---	--	---	----	---	---	----	---	Upland upper slope	[illegible]	Good	Good	Pine/aspen	Undisturbed	ID2c
---	---	3[illegible]	21.7	----	----	---	--	---	----	---	---	----	---	Bottomland depression	[illegible]	Poor	Poor	Black spruce & tamarack	Undisturbed	VC2
---	---	[illegible]	53.2	----	----	---	--	---	----	---	---	----	---	Bottomland depression	[illegible]	Poor	Poor	Black spruce, tamarack, moss	Undisturbed	VC2
---	---	25.[illegible]	22.[illegible]	14.[illegible]	[illegible]	---	--	---	----	---	---	----	---	Upland upper slope	4	Good	Good	Herbaceous	Undisturbed	ID2c
8-0.46	55-[illegible]	31.[illegible]	27.[illegible]	23.[illegible]	[illegible]	---	--	---	----	---	---	----	---	Upland flat	0	Medium	Good	Herbaceous	Hay	ID2b
0.2[illegible]	[illegible]	34.1	31.2	25.[illegible]	[illegible]	---	--	---	----	---	---	----	---	Upland flat	[illegible]	Medium	Good	Aspen	Undisturbed	ID2b
5-0.38	50-[illegible]	34.3	31.[illegible]	35.[illegible]	12.2	97*	--	---	----	---	---	----	---	Upland flat	0	Medium	Poor	Aspen	Undisturbed	ID2b
2-0.26	33-[illegible]	35.[illegible]	34.[illegible]	33.[illegible]	14.[illegible]	[illegible]	--	---	----	---	---	----	---	Upland flat	0	Medium	Poor	Herbaceous	Undisturbed	ID2b
---	---	25.[illegible]	23.[illegible]	----	----	---	--	---	----	---	---	----	---	Terrace depression	0	Poor	Poor	Herbaceous	Undisturbed	IIC3
---	---	[illegible]	[illegible]	----	----	---	--	---	----	---	---	----	---	Bottomland depression	0	Poor	Poor	Herbaceous/willow	Undisturbed	VC3
4-1.05	44-[illegible]	---	---	----	----	---	--	---	----	---	---	----	---	Upland slope	5	Poor	Poor	Herbaceous	Grazed	IC
0-0.53	45-[illegible]	---	---	----	----	---	--	---	----	---	---	----	---	Upland slope	4	Medium	Medium	Herbaceous	Hay	IC

(Continued)

Soil Data, 6- to 12-in. Layer

Site No.	Location: State	Location: County or Parish	USDA Soil Map Identification: Soil Series	0- to 6-in. USDA Type	Topography Class	USDA: Type	USDA: Texture by Wt, %: Sand	Silt	Clay	USCS: % Fines	Atterberg Limits: LL	PL	PI	USCS: Type	Organic Cont %	Avg Dry Density lb/cu ft	Wet-Season Condition: No. of Tests	Average: MC, %	CI	RI	RCI	Range: MC, %	CI	RI	R
103	Colo.	Mesa	Unclassified	SiL	High	SiL	18	66	16	94	36	26	10	ML	3.66	61.2	4	33.9	79	0.77	61	32.0-36.8	72-86	0.48-0.95	35
105		Mesa	Unclassified	SiL	High	SiL	18	64	18	93	41	26	15	ML	3.96	60.6	6	34.1	105	0.73	77	31.4-42.4	85-147	0.58-0.88	53
107		Mesa	Unclassified	SiL	High	SiL	20	61	19	93	43	26	17	ML	3.13	67.4	--	----	---	----	---	---	---	---	-
108		Mesa	Unclassified	SiL	Low	SiL	12	76	12	98	64	48	16	MH	5.84	57.4	1	59.0	176	0.90	158	59.0	176	0.90	1
109		Delta	Unclassified	L	High	L	44	38	18	62	36	22	14	CL	3.62	72.4	3	31.5	118	0.82	99	29.4-33.3	92-161	0.78-0.89	72
110		Delta	Unclassified	L	High	L	42	42	16	65	39	25	14	ML	5.02	67.4	5	31.8	100	0.72	72	29.1-33.4	81-113	0.60-0.82	49
112		Delta	Unclassified	SiL	High	SiL	34	51	15	78	38	25	13	ML	5.34	64.9	7	31.5	112	0.73	83	26.3-34.8	92-139	0.58-0.92	53
114		Mesa	Unclassified	SiL	High	SiL	20	65	15	96	42	28	14	ML	5.51	59.7	8	33.3	128	0.69	89	29.4-36.0	103-148	0.49-0.80	61
115		Mesa	Unclassified	L	High	L	31	49	20	82	29	19	10	CL	3.66	69.9	9	22.8	102	0.58	60	19.8-24.8	76-128	0.49-0.72	39
116		Mesa	Unclassified	L	High	L	46	42	12	65	49	44	5	ML	4.15	59.3	--	----	---	----	---	---	---	---	-
117		Delta	Unclassified	SiCL	High	SiCL	10	55	35	93	36	17	19	CL	0.86	92.4††	2	14.2††	211††	1.22††	266††	13.1-15.2	195-238	1.22-1.23	238
119		Delta	Unclassified	SiC	High	SiCL	11	50	39	99	38	19	19	CL	0.59	96.8	--	----	---	----	---	---	---	---	-
120	Miss.	Warren	Memphis	SiL	High	SiL	9	71	20	95	33	23	10	CL	0.46	92.4	9	24.8	200	0.56	121	23.2-26.1	168-261	0.38-0.80	66
123	La.	Rapides	Savannah	SiL	High	L	32	48	20	74	28	18	10	CL	0.62	93.6	3	22.5	111	0.66	72	21.3-23.2	82-136	0.54-0.76	55
124		Rapides	Caddo	SiL	Low	SiL	7	74	19	95	--	NP	--	ML	1.05	89.3	2	27.8	128	0.25	32	27.3-28.4	119-138	0.22-0.28	26
125	Ill.	Pope	Grantsburg	SiL	High	SiL	10	76	14	97	32	23	9	ML	0.45	83.7	14	30.3	93	0.49	46	26.3-33.4	64-177	0.32-0.80	22
126	Miss.	Lafayette	Providence	SiCL	Low	SiCL	6	60	34	98	47	24	23	CL	0.70	90.5	--	----	---	----	---	---	---	---	-
127		Lafayette	Tippah	SiL	High	SiL	17	58	25	91	30	20	10	CL	0.78	99.3	--	----	---	----	---	---	---	---	-
128		Lafayette	Lexington	SiL	High	SiCL	9	62	29	96	39	20	19	CL	0.80	93.0	--	----	---	----	---	---	---	---	-
150	Mont.	Custer	Bowdoin	SiCL	Low	SiCL	10	50	40	95	52	20	32	CH	1.98	88.7	--	----	---	----	---	---	---	---	-
151		Custer	Havre	SiCL	Low	SiCL	14	51	35	93	47	22	25	CL	2.87	84.9	--	----	---	----	---	---	---	---	-
152		Custer	Havre	SiL	High	SiL	17	62	21	99	30	20	10	CL	1.65	83.7	--	----	---	----	---	---	---	---	-
153	Wash.	Spokane	Couse	SiL	Low	SiL	14	67	19	94	33	22	11	CL	2.60	86.7	1	29.2	60	0.24	14	29.2	60	0.24	
154		Spokane	Couse	SiL	High	SiL	16	66	18	93	28	21	7	CL-ML	0.95	79.9	--	----	---	----	---	---	---	---	-
155		Spokane	Caldwell	SiL	Low	SiL	20	67	13	88	34	26	8	ML	3.27	77.4	2	32.8	235	0.57	135	32.0-33.5	231-238	0.39-0.76	90
157		Spokane	Thatuna	SiL	Low	SiL	13	72	15	95	36	26	10	ML	2.81	71.2	4	35.0	101	0.62	64	32.7-36.9	80-126	0.49-0.73	39
158	Alaska	Fairbanks (city)	Tanana	SiL	Low	SiL	10	76	8	88	34	NP	--	ML	1.45	73.7	--	----	---	----	---	---	---	---	-
159			Gilmore-Fairbanks	SiL	High	L	48	41	11	89	29	21	8	CL	1.25	79.9	--	----	---	----	---	---	---	---	-
160			Gilmore-Fairbanks	L	High	SL	65	36	11	71	29	NP	--	ML	1.65	81.2	--	----	---	----	---	---	---	---	-
161			Gilmore-Fairbanks	SiL	High	SiL	18	65	7	44	24	NP	--	ML	0.95	84.9	--	----	---	----	---	---	---	---	-
162			Gilmore-Fairbanks	SiL	High	SiL	20	72	8	45	30	NP	--	ML	1.45	88.7	--	----	---	----	---	---	---	---	-
163			Fairbanks	SiL	Low	SiL	22	71	7	40	19	NP	--	ML	1.45	84.3	--	----	---	----	---	---	---	---	-
164			Gilmore-Fairbanks	SiL	High	SiL	8	80	12	44	31	NP	--	ML	2.87	74.9	--	----	---	----	---	---	---	---	-
165			Fairbanks	SiL	High	SiL	24	67	9	39	--	NP	--	ML	0.86	86.2	--	----	---	----	---	---	---	---	-
166			Fairbanks	SiL	High	SiL	17	73	10	39	--	NP	--	ML	1.65	78.7	--	----	---	----	---	---	---	---	-
167			Tanana	SiL	Low	SiL	23	68	9	36	25	NP	--	ML	1.33	91.2	--	----	---	----	---	---	---	---	-
168			Tanana	SiL	Low	SiL	17	74	9	42	30	NP	--	ML	2.08	99.9	--	----	---	----	---	---	---	---	-
169			Gilmore-Fairbanks	SiL	High	SiL	14	69	15	45	33	23	10	CL	0.86	83.7	--	----	---	----	---	---	---	---	-
170			Tanana	SiL	Low	SiL	30	63	7	36	31	NP	--	ML	2.47	76.2	--	----	---	----	---	---	---	---	-
173	Maine	Penobscot	Burnham	L	Low	L	32	46	22	63	--	NP	--	ML	1.88	84.3	--	----	---	----	---	---	---	---	-
174		Penobscot	Dixmont	L	High	L	36	47	17	67	--	NP	--	ML	2.67	76.2	--	----	---	----	---	---	---	---	-
175		Penobscot	Biddeford	L	Low	L	33	48	19	69	--	NP	--	ML	2.53	80.5	--	----	---	----	---	---	---	---	-

* Questionable value, not used in analysis.
†† Data from site in arid area, not used in analysis.

Table B3 (Concluded)

Soil Data, 6- to 12-in. Layer																							
Wet-Season Condition											High-Moisture Condition							Site Environmental Data					
											At Lowest Rating Cone Index												
Average			Range				Moisture Content, %, at				% Sat. at Field Max	Depth to Water Table in.	Dry Density lb/cu ft	MC, %	% Sat.	CI	RI	Lowest RCI	Topographic Position	Slope, %	Drainage		Vegetation	
CI	RI	RCI	MC, %	CI	RI	RCI	Atmos Tension 0.005	Tension 0.06	Field Max	Field Min											Surface	Internal		
79	0.77	61	32.0-36.8	72-86	0.68-0.95	55-77	45.0	37.4	35.7	11.9	---	--	---	----	---	---	----	---	Upland upper slope	7	Good	Good	Herbaceous	Undistu
105	0.73	79	31.4-42.4	85-147	0.58-0.88	53-129	50.4	39.1	47.9	12.2	---	--	---	----	---	---	----	---	Upland ridge	4	Good	Good	Herbaceous	Undistu
---	----	---	---	---	---	---	37.8	34.9	53.4	16.7	---	--	---	----	---	---	----	---	Upland upper slope	4	Good	Good	Spruce, berbaceous	Grazed
176	0.90	158	59.0	176	0.90	158	61.1	55.6	68.5	42.4	96	--	---	----	---	---	----	---	Upland depression	0	Poor	Poor	Herbaceous	Grazed
118	0.82	99	29.4-33.3	92-161	0.78-0.89	72-143	47.0	28.8	34.3	17.8	---	--	---	----	---	---	----	---	Upland lower slope	10	Good	Good	Aspen/herbaceous	Grazed
100	0.72	72	29.1-33.4	81-113	0.60-0.82	49-86	62.6	38.6	36.7	16.0	---	--	---	----	---	---	----	---	Upland upper slope	20	Good	Good	Aspen/herbaceous	Grazed
112	0.73	83	26.3-34.8	92-139	0.58-0.92	53-128	46.0	29.9	35.3	11.5	---	--	---	----	---	---	----	---	Upland lower slope	8	Good	Good	Scrub oak/shrub	Grazed
128	0.84	89	29.4-36.0	103-148	0.49-0.80	61-118	59.4	49.2	36.3	9.4	---	--	---	----	---	---	----	---	Terrace lower slope	8	Good	Good	Aspen/berbaceous	Undistu
102	0.58	60	19.8-24.8	76-128	0.49-0.72	39-86	46.6	31.8	24.7	6.8	---	--	---	----	---	---	----	---	Upland upper slope	20	Good	Good	Scrub oak/herbaceous & shrub	Undistu
---	----	---	---	---	---	---	66.9	56.6	28.6	11.6	---	--	---	----	---	---	----	---	Terrace lower slope	0	Good	Good	Pine & juniper/herbaceous	Undistu
211††	1.22††	266††	13.1-15.2	195-238	1.22-1.23	238-293	23.9	23.2	19.4	6.5	---	--	---	----	---	---	----	---	Terrace lower slope	4	Good	Medium	Herbaceous, sparse	Undistu
---	----	---	---	---	---	---	24.6	23.2	16.0	6.2	---	--	---	----	---	---	----	---	Upland ridge	10	Good	Medium	Bare	Undistu
200	0.96	121	23.2-26.1	168-261	0.88-0.80	66-209	27.5	26.1	26.5	7.4	---	--	---	----	---	---	----	---	Upland flat	0	Good	Good	Herbaceous	Hay
111	0.66	72	21.3-23.2	82-136	0.54-0.76	55-87	29.0	26.9	26.2	----	---	--	---	----	---	---	----	---	Upland upper slope	5	Good	Medium	Herbaceous	Grazed
128	0.25	32	27.3-28.4	113-138	0.22-0.28	26-39	27.4*	23.4	32.2	----	89	--	---	----	---	---	----	---	Upland depression	0	Poor	Poor	Herbaceous	Grazed
93	0.49	46	26.3-33.4	64-177	0.32-0.80	22-93	39.7	31.0	29.4	7.6	---	--	---	----	---	---	----	---	Upland upper slope	4	Good	Medium	Pine	Undistu
---	----	---	---	---	---	---	31.4	30.4	32.4	11.2	134	--	---	----	---	---	----	---	Upland flat	8	Poor	Medium	Pine	Undistu
---	----	---	---	---	---	---	24.5	23.0	26.6	13.3	---	--	---	----	---	---	----	---	Upland upper slope	15	Good	Medium	Pine	Undistu
---	----	---	---	---	---	---	28.3	25.6	28.8	7.4	---	--	---	----	---	---	----	---	Upland upper slope	10	Good	Good	Pine	Undistu
---	----	---	---	---	---	---	34.1	31.[illegible]	28.9	14.3	87	--	---	----	---	---	----	---	Terrace flat	0	Poor	Poor	Sparse, herbsceous	Grazed
---	----	---	---	---	---	---	31.5	27.[illegible]	30.6	11.8	85	--	---	----	---	---	----	---	Bottomland flat	0	Poor	Poor	Herbaceous	Grazed
---	----	---	---	---	---	---	36.2	30.[illegible]	26.1	6.6	---	--	---	----	---	---	----	---	Terrace flat	0	Medium	Good	Herbaceous	Grazed
60	0.24	14	23.2	60	0.24	14	46.4	30.0	43.6	11.2	126	--	---	----	---	---	----	---	Upland upper slope	10	Good	Poor	Pine	Undistu
---	----	---	---	---	---	---	39.6	28.9	27.6	16.3	---	--	---	----	---	---	----	---	Upland upper slope	5	Good	Poor	Wheat	Cultiv
235	0.57	135	32.0-33.5	231-238	0.39-0.76	90-181	46.2	37.5	44.2	20.1	138	--	---	----	---	---	----	---	Bottomland flat	0	Poor	Medium	Herbaceous	Grazed
101	0.62	64	32.7-36.[illegible]	86-126	0.44-0.73	39-79	51.5	36.2	45.0	23.5	[illegible]	--	---	----	---	---	----	---	Upland upper slope	12	Good	Medium	Fallowed	Cultiv
---	----	---	---	---	---	---	---	---	----	----	---	--	---	----	---	---	----	---	Bottomland flat	0	Poor	Poor	White spruce	Undistu
---	----	---	---	---	---	---	---	---	----	----	---	--	---	----	---	---	----	---	Upland upper slope	32	Good	Medium	Aspen	Undistu
---	----	---	---	---	---	---	---	---	----	----	---	--	---	----	---	---	----	---	Upland upper slope	32	Good	Medium	Herbaceous	Cultiv
---	----	---	---	---	---	---	---	---	----	----	---	--	---	----	---	---	----	---	Upland ridge	6	Good	Good	Herbsceous/shrubs	Cultiv
---	----	---	---	---	---	---	---	---	----	----	---	--	---	----	---	---	----	---	Upland ridge	0	Good	Good	Alder-aspen	Undistu
---	----	---	---	---	---	---	---	---	----	----	---	--	---	----	---	---	----	---	Terrace flat	0	Poor	Poor	Birch & spruce	Undistu
---	----	---	---	---	---	---	---	---	----	----	---	--	---	----	---	---	----	---	Upland lower slope	18	Good	Good	Willow & birch	Undistu
---	----	---	---	---	---	---	---	---	----	----	---	--	---	----	---	---	----	---	Terrace flat	0	Medium	Medium	Aspen	Undistu
---	----	---	---	---	---	---	---	---	----	----	---	--	---	----	---	---	----	---	Terrace flat	0	Medium	Medium	Herbaceous	Cultiv
---	----	---	---	---	---	---	---	---	----	----	---	--	---	----	---	---	----	---	Bottomland flat	0	Poor	Poor	Alder, willow, birch, & spruce	Undistu
---	----	---	---	---	---	---	---	---	----	----	---	--	---	----	---	---	----	---	Bottomland flat	0	Poor	Poor	Herbaceous	Cultiv
---	----	---	---	---	---	---	---	---	----	----	---	--	---	----	---	---	----	---	Upland lower slope	18	Good	Good	Aspen	Undistu
---	----	---	---	---	---	---	---	---	----	----	---	--	---	----	---	---	----	---	Bottomland flat	0	Poor	Poor	Herbaceous	Cultiv
---	----	---	---	---	---	---	34.8	32.1	----	----	---	--	---	----	---	---	----	---	Upland flat	0	Poor	Poor	Pine	Undistu
---	----	---	---	---	---	---	46.3	33.8	----	----	---	--	---	----	---	---	----	---	Upland flat	0	Poor	Poor	Pine/spruce	Undistu
---	----	---	---	---	---	---	40.7	34.3	----	----	---	--	---	----	---	---	----	---	Upland flat	0	Poor	Poor	Fir, cedar, pine	Undistu

Table B3 (Concluded)

		Moisture Content, %, at					High-Moisture Condition											
		Atmos Tension		Field	Field	% Sat. at	At Lowest Rating Cone Index								Site Environmental Data					
RI	RCI	0.005	0.06	Max	Min	Field Max	Depth to Water Table in.	Dry Density lb/cu ft	MC, %	% Sat.	CI	RI	Lowest RCI	Topographic Position	Slope, %	Drainage Surface	Drainage Internal	Vegetation	Land Use	Eng. Conf. Land Form
8-0.95	35-77	45.0	37.4	35.7	11.9	---	--	---	----	---	---	----	---	Upland upper slope	7	Good	Good	Herbaceous	Undisturbed	ID2b
8-0.88	53-129	50.4	39.1	47.9	12.2	---	--	---	----	---	---	----	---	Upland ridge	4	Good	Good	Herbaceous	Undisturbed	IVB1
---	---	37.8	34.9	53.4	16.7	---	--	---	----	---	---	----	---	Upland upper slope	4	Good	Good	Spruce, herbaceous	Grazed	IVB1
0.90	158	61.1	55.6	68.5	42.4	96	--	---	----	---	---	----	---	Upland depression	0	Poor	Poor	Herbaceous	Grazed	ID2b
8-0.89	72-143	47.0	28.8	34.3	17.0	---	--	---	----	---	---	----	---	Upland lower slope	10	Good	Good	Aspen/herbaceous	Grazed	IVA2
0-0.82	49-86	62.6	38.6	36.7	16.0	---	--	---	----	---	---	----	---	Upland upper slope	20	Good	Good	Aspen/herbaceous	Grazed	IVA2
8-0.92	53-128	46.0	29.9	35.3	11.5	---	--	---	----	---	---	----	---	Upland lower slope	8	Good	Good	Scrub oak/shrub	Grazed	IVA2
0-0.80	61-118	59.4	49.2	36.3	9.4	---	--	---	----	---	---	----	---	Terrace lower slope	6	Good	Good	Aspen/berbaceous	Undisturbed	VF
0-0.72	39-86	46.6	31.8	24.7	6.8	---	--	---	----	---	---	----	---	Upland upper slope	20	Good	Good	Scrub oak/herbaceous & shrub	Undisturbed	IVB1
---	---	66.9	56.6	28.6	11.6	---	--	---	----	---	---	----	---	Terrace lower slope	0	Good	Good	Pine & juniper/berbaceous	Undisturbed	IIC1
8-1.23	238-293	23.9	23.2	19.4	6.5	---	--	---	----	---	---	----	---	Terrace lower slope	4	Good	Medium	Herbaceous, sparse	Undisturbed	IIF
---	---	24.6	23.2	16.0	6.2	---	--	---	----	---	---	----	---	Upland ridge	10	Good	Medium	Bare	Undisturbed	IVA2
8-0.80	66-209	27.5	26.1	26.5	7.4	---	--	---	----	---	---	----	---	Upland flat	0	Good	Good	Herbaceous	Hay	IIIA
4-0.76	55-87	29.0	26.9	26.2	----	---	--	---	----	---	---	----	---	Upland upper slope	5	Good	Medium	Herbaceous	Grazed	IVC3
8-0.28	26-39	27.4*	23.4	32.2	----	89	--	---	----	---	---	----	---	Upland depression	0	Poor	Poor	Herbaceous	Grazed	IVC3
2-0.80	22-83	39.7	31.0	29.4	7.6	---	--	---	----	---	---	----	---	Upland upper slope		Good	Medium	Pine	Undisturbed	IIIA
--	---	31.4	30.4	32.4	11.2	104	--	---	----	---	---	----	---	Upland flat	8	Poor	Medium	Pine	Undisturbed	IIIA
--	---	24.5	23.0	20.6	13.3	---	--	---	----	---	---	----	---	Upland upper slope	15	Good	Medium	Pine	Undisturbed	IIIA
--	---	28.3	25.6	28.8	7.4	---	--	---	----	---	---	----	---	Upland upper slope	10	Good	Good	Pine	Undisturbed	IIIA
--	---	34.1	31.0	28.9	14.3	87	--	---	----	---	---	----	---	Terrace flat	0	Poor	Poor	Sparse, herbaceous	Grazed	IIC1
--	---	31.5	27.0	30.6	11.8	85	--	---	----	---	---	----	---	Bottomland flat	0	Poor	Poor	Herbaceous	Grazed	IIB1
--	---	36.2	30.0	26.1	6.6	---	--	---	----	---	---	----	---	Terrace flat	0	Medium	Good	Herbaceous	Grazed	IIC1
0.24	14	46.4	30.0	43.6	11.2	125	--	---	----	---	---	----	---	Upland upper slope	10	Good	Poor	Pine	Undisturbed	IIIA
--	---	39.6	28.9	27.6	10.3	---	--	---	----	---	---	----	---	Upland upper slope	6	Good	Poor	Wheat	Cultivated	IIIA
4-0.76	90-181	46.2	37.5	45.2	18.1	105	--	---	----	---	---	----	---	Bottomland flat	0	Poor	Medium	Herbaceous	Grazed and cultivated	IIB1
4-0.73	39-79	51.8	36.2	45.0	23.8	96	--	---	----	---	---	----	---	Upland upper slope	12	Good	Medium	Fallowed	Cultivated	IIIA
--	---	---	---	----	----	---	--	---	----	---	---	----	---	Bottomland flat	0	Poor	Poor	White spruce	Undisturbed	IIB1
--	---	---	---	----	----	---	--	---	----	---	---	----	---	Upland upper slope	32	Good	Medium	Aspen	Undisturbed	IVB2
--	---	---	---	----	----	---	--	---	----	---	---	----	---	Upland upper slope	32	Good	Medium	Herbaceous	Cultivated, idle	----
--	---	---	---	----	----	---	--	---	----	---	---	----	---	Upland ridge	6	Good	Good	Herbaceous/shrubs	Cultivated, idle	IIIA
--	---	---	---	----	----	---	--	---	----	---	---	----	---	Upland ridge	0	Good	Good	Alder-aspen	Undisturbed	IIIA
--	---	---	---	----	----	---	--	---	----	---	---	----	---	Terrace flat	0	Poor	Poor	Birch & spruce	Undisturbed	VF
--	---	---	---	----	----	---	--	---	----	---	---	----	---	Upland lower slope	18	Good	Good	Willow & birch	Undisturbed	IIIA
--	---	---	---	----	----	---	--	---	----	---	---	----	---	Terrace flat	0	Medium	Medium	Aspen	Undisturbed	VF
--	---	---	---	----	----	---	--	---	----	---	---	----	---	Terrace flat	0	Medium	Medium	Herbaceous	Cultivated, idle	VF
--	---	---	---	----	----	---	--	---	----	---	---	----	---	Bottomland flat	0	Poor	Poor	Alder, willow, birch, & spruce	Undisturbed	IIB1
--	---	---	---	----	----	---	--	---	----	---	---	----	---	Bottomland flat	0	Poor	Poor	Herbaceous	Cultivated, grazed	IIB1
--	---	---	---	----	----	---	--	---	----	---	---	----	---	Upland lower slope	18	Good	Good	Aspen	Undisturbed	IIIA
--	---	---	---	----	----	---	--	---	----	---	---	----	---	Bottomland flat	0	Poor	Poor	Herbaceous	Cultivated, grazed	IIB1
--	---	39.0	32.1	----	----	---	--	---	----	---	---	----	---	Upland flat	0	Poor	Poor	Pine	Undisturbed	ID3
--	---	46.3	33.8	----	----	---	--	---	----	---	---	----	---	Upland flat	0	Poor	Poor	Pine/spruce	Undisturbed	ID3
--	---	48.7	34.3	----	----	---	--	---	----	---	---	----	---	Upland flat	0	Poor	Poor	Fir, cedar, pine	Undisturbed	ID3

3

Table B4

Survey Site Data

Site No.	Location State	Location County or Parish	USDA Soil Map Identification Soil Series	0- to 6-in. USDA Type	Topography Class	Soil Data, 6- to 12-in. Layer: USDA Texture Type	USDA Texture by Wt, % Sand	Silt	Clay	USCS % Fines	Atterberg Limits LL	PL	PI	USCS Type	Organic Cont %	Dry Density lb/cu ft	Wet-Season Condition Average MC, %	CI	RI	MCI	MC, % at Atmos. Tension 0	0.66	% Sat. at 0 Atmos Tension	High-Moisture Condition At Lowest MCI Depth to Water Table, in.	MC %	CI	RI
																								Southern Region			
101	Miss.	Sharkey	Dundee	SiL	Low	SiL	11	64	25	99	38	22	16	CL	1.0	97.4	----	---	----	---	27.6	26.2	104	---	----	---	---
102		Sharkey	Commerce	SiL	Low	SiL	21	65	14	93	29	25	4	ML	0.6	95.5	----	---	----	---	30.0	26.2	108	---	----	---	---
103		Sharkey	Commerce	SiL	High	SiL	20	67	13	93	32	23	9	CL	0.4	92.4	----	---	----	---	----	27.1	---	---	----	---	---
104		Sharkey	Dundee	SiL	Low	SiCL	13	56	31	97	52	23	29	CH	4.0	93.0	30.4‡	172‡	1.02‡	175‡	30.8	29.5	102	---	30.4	172	1.0
105		Washington	Undesignated	SiL	High	SiL	25	61	14	85	---	---	NP	ML	0.7	84.9	27.7‡	175‡	0.72‡	126‡	----	----	---	---	----	---	---
106		Washington	Sharkey	SiC	Low	C	21	10	69	99	82	32	50	CH	1.5	71.2	49.7	96	0.95	92	57.7	55.7	112*	6	51.7	98	0.9
107		Washington	Sharkey	C	Low	C	5	39	56	97	81	32	49	CH	1.3	69.3	55.9	76	0.99	71	56.6	55.2	104	6	60.0	73	0.9
108		Washington	Sharkey	SiCL	Low	C	14	34	52	97	74	28	46	CH	1.5	76.2	41.9	143	1.08	154	48.5	47.2	109	---	----	---	---
109		Coahoma	Alligator	SiCL	Low	C	7	30	63	98	79	30	46	CH	1.2	76.2	44.5	110	0.96	106	50.2	48.4	113*	---	----	---	---
110		Coahoma	Sharkey	SiC	Low	C	7	35	58	96	72	28	44	CH	0.8	77.4	41.2	96	0.98	94	49.1	46.5	101	---	----	---	---
111		Coahoma	Dubbs	SiL	Low	SiL	23	53	24	92	34	17	15	CL	2.2	102.4	23.0	209	0.99	208	24.0	22.8	103	---	25.0	206	1.0
112		Tunica	Dubbs	SiL	Low	L	27	47	22	90	37	21	16	CL	1.4	94.3	26.7	135	0.96	129	27.9	26.4	98	---	28.1	119	0.9
113		Tunica	Sharkey	SiCL	Low	SiCL	7	34	59	96	57	25	32	CH	1.9	88.0	34.1	127	0.97	123	32.2	31.5	95	---	34.1	126	0.9
114		Tunica	Tunica	SiC	Low	SiC	12	44	44	95	57	24	33	CH	1.0	86.2	31.6‡	127	0.97	122	35.0	34.6	98	---	----	---	---
115	Ariz.	St. Francis	Loring	SiL	High	SiL	8	75	17	100	29	22	4	ML	0.6	88.0	27.6	131	...37	47	30.9	26.4	93	---	----	---	---
116		St. Francis	Grenada	SiL	High	SiCL	7	66	27	99	37	22	15	CL	0.2	96.1	26.7	208	0.84	173	28.1	26.8	104	---	----	---	---
117		St. Francis	Loring	SiL	Low	SiL	8	70	22	99	36	23	13	CL	0.5	91.1	31.0	106	0.69	73	30.8	29.3	100	---	31.2	100	0.6
118		Lee	Lintonia	SiL	High	SiL	9	73	18	98	32	22	10	CL	1.4	97.4	24.4‡	244‡	0.64‡	156‡	25.6	24.1	96	---	----	---	---
119		Lee	Clack	SL	High	SL	72	20	8	35	19	--	NP	SM	0.6	97.4	----	---	----	---	22.3	14.2	65	---	----	---	---
120		Lee	Forestdale	SiL	Low	L	46	43	12	99	27	18	9	CL	1.6	99.3	----	---	----	---	22.7	16.8	96	---	----	---	---
121		Phillips	Calhoun	SL	High	SiL	9	77	14	99	22	21	1	ML	0.5	93.0	----	---	----	---	26.7	24.0	91	---	----	---	---
122		Phillips	Waverly	SiL	Low	SiL	7	75	18	99	28	22	6	CL-ML	0.7	88.6	33.0	84	0.55	51	29.1*	27.6	89*	6	33.7	61	0.3
123		Phillips	Waverly	SiL	Low	SiL	12	64	24	94	34	23	11	CL	1.4	91.8	36.0	71	0.52	42	35.6*	32.6	92*	4.5	37.4	67	0.4
124		Drew	Dubbs	SiL	High	SiL	23	50	17	85	26	18	8	CL	0.7	93.0	24.4	131	0.73	92	26.3	24.4	96	---	----	---	---
125		Drew	Roxwell	L	High	C	20	38	42	93	61	30	31	CH	0.7	77.5	34.7	169	1.03	174	47.8	46.8	105	---	----	---	---
126		Ashley	Lexington	SiL	High	SiL	29	59	16	83	24	17	7	CL-ML	0.4	99.9	17.6‡	132‡	0.62‡	82‡	22.3	20.8	90	---	----	---	---
127		Ashley	Lafe	SiL	Low	SiL	25	68	4	86	27	--	NP	ML	0.4	97.4	----	---	----	---	22.2	17.0	84	---	----	---	---
128		Ashley	Waverly	SiL	Low	SiL	4	71	25	93	35	28	7	ML	0.7	94.9	34.8‡	133‡	0.16‡	24‡	22.4*	20.4	89*	6	34.0	133	0.1
129		Ashley	Lexington	SiL	High	SiL	23	57	20	88	28	18	10	CL	0.3	98.8	20.7‡	168‡	0.87‡	146‡	24.6	21.7	96	---	----	---	---
130		Ashley	Lexington	SiL	Low	SiL	21	57	22	88	27	18	9	CL	0.7	94.9	24.0‡	108‡	0.41‡	41‡	24.6	23.3	96	---	24.0	100	0.4
131	La.	Morehouse	Vidalia	SiL	Low	SiL	33	53	14	73	---	16	3	ML	0.4	99.9	24.9‡	164‡	1.16‡	194‡	21.4	15.8	87	---	----	---	---
132		Morehouse	Vidalia	SiL	High	SL	71	25	4	33	22	16	6	SM-SC	1.2	101.8	18.7	131	0.55	73	21.1	19.0	90	---	----	---	---
133		Morehouse	Wrightsville	SiL	Low	L	44	48	8	82	25	21	4	ML	0.7	104.9	22.4	178	0.35	66	19.3*	17.8	89*	<13	21.4	139	0.2
134		Sharkey	Commerce	SL	High	ML	43	42	15	93	18	12	6	CL-ML	0.8	111..	15.0‡	101	0.63	113	16.2	15.3	88	---	----	---	---
135		Sharkey	Thompson	SL	Low	ML	44	47	9	89	23	--	NP	SM	1.0	104..	15.4‡	24.4	0.97‡	233‡	17.7	15.6	72	---	----	---	---
136		Sharkey	Ruston	SL	High	ML	60	21	21	36	24	--	NP	SM	0.4	108.6	----	---	----	---	16.3	13.4	83	---	----	---	---
137		Tenant	Ruston	SL	High	SL	56	24	20	44	24	16	8	SM	0.7	98.6	17.7‡	273‡	0.88‡	240‡	22.8	18.5	96	---	----	---	---
138		Tenant	Sunflower	SiL	Low	SiL	31	44	25	74	33	18	5	CL-ML	0.6	93.7	22.2‡	114‡	0.96‡	109‡	43.6	34.9	93	---	----	---	---
139		Tenant	Bowie	SL	High	L	51	44	17	64	24	15	9	CL	0.8	94.3	22.4‡	101‡	0.92‡	174‡	26.2	21.0	92	---	----	---	---
140		Bayland	Vidalia	SiL	Low	SiL	6	64	28	94	23	23	0	ML	0.6	94.3	----	---	----	---	29.8	25.9	104	---	----	---	---
141		Bayland	Silverman	SiL	High	SiL	32	42	26	75	25	25	0	CL	0.8	99.3	21.9	153	0.68	111	23.0	21.2	92	---	----	---	---
142		Bayland	Kalb	SiL	Low	SiL	12	73	15	91	---	---	NP	ML	1.1	92.4	30.0	196	0.34	66	29.9	26.0	100	26	29.0	196	0.3
143		Tensbert	Olivier	SiL	Low	SiL	16	69	15	91	27	21	6	CL-ML	0.8	96.1	----	---	----	---	27.6	24.2	102	---	----	---	---
144		Lintonbert	Olivier	SiL	Low	SiL	25	61	14	82	27	20	6	CL-ML	0.7	103.6	----	---	----	---	21.9	20.2	96	---	----	---	---
145		St. Tammany	Calhoun	SiL	Low	SiL	16	73	11	92	25	17	8	ML	0.7	96.1	23.4	136	0.40	59	24.2	22.3	89	---	27.4	105	0.2
146		St. Tammany	Portland	SiL	Low	SiL	5	78	18	94	28	20	8	ML	1.0	99.9	21.4‡	137‡	0.56‡	81‡	22.6	21.0	91	---	----	---	---
147	Miss.	Pearl River	Savannah	L	High	L	34	42	24	73	25	17	8	CL	1.3	97.4	20.5‡	169‡	0.92‡	152‡	24.4	21.0	93	---	----	---	---
148		Pearl River	Susquehanna	L	Low	CL	37	37	26	72	34	21	14	CL	0.8	97.8	22.3‡	142‡	0.86‡	164‡	22.6	21.0	99	---	22.8	192	0.8
149		Pearl River	Cahaba	SL	Low	L	52	36	8	44	16	14	2	ML	0.6	104.6	----	---	----	---	18.1	16.1	82	---	----	---	---
201		Hinds	Prentiss	SiL	High	SiL	20	59	21	87	24	24	0	ML	0.6	91.5	29.2	273	0.66	181	33.4	29.4	94	---	----	---	---
202		Hinds	Loring	SiL	High	SiL	7	70	22	99	44	22	8	ML	0.8	85..	27.5	168	0.57	64	37..	31.2	99	---	----	---	---
203		Hinds	Grenada	SiL	High	SiCL	9	44	47	100	36	21	15	CL	0.4	92.5	26.8	191	0.63	142	32.4	27.6	98	---	----	---	---
204		Hinds	Prentiss	SiL	High	SiL	9	62	29	100	40	23	8	ML	0.7	87.4	----	---	----	---	34.8	32.8	103	---	----	---	---
205		Hinds	Tensas A.	SiL	Low	SiL	8	54	38	99	36	20	16	ML	1.1	96.2	32.0	244	0.41	119	36.4	32.5	105	---	----	---	---
206		Hinds	Loring	SiL	High	SiL	11	74	15	98	45	22	23	CL	0.4	91.1	28.9	181	0.57	101	29..	26.9	97	---	27.4	159	0.62
207		Hinds	Grenada	SiL	Low	SiCL	7	44	49	99	34	21	13	CL	0.4	91..	24..	193	0.50	96	31.2	26.8	93	---	29.6	142	0.50
208		Hinds	Bowdre	SiCL	High	SiCL	4	43	53	99	54	28	26	CL	0.4	87.4	34.5	111	0.62	69	34.2	27.6	95	16	29.0	102	0.59
209		Hinds	Tensas clay	SiCL	Low	SiCL	4	41	55	97	64	32	32	CH-ML	0.8	74.3	51.7	193	1.47	46	41..	34.0	102	---	----	---	---
210		Scott	Providence	SiL	Low	SiL	14	53	33	98	40	24	16	CH	1.7	93..	34.3	434	1.32	178	28.0*	25.7	93*	---	30.6	129	1.26
211		Scott	Tensas	SiL	Low	SiL	10	48	42	98	43	23	20	CH	1.7	94..	33.2	256	1.09	171	----	28.9	---	---	----	---	---
212		Scott	Bibb	SiL	Low	SiL	5	44	51	95	49	23	26	CL	1.52	101.6	28..	134	0.87	70	18.4*	17.4	93*	---	22.1	102	0.60
213		Scott	Bibb	SiL	Low	SiL	5	39	56	96	44	22	22	CL	1.42	94..	29..	126	1.13	143	29.6	24.6	91	---	26.2	126	1.00
214		Dowd B.	Prentiss	SiL	Low	SiL	8	51	41	92	33	21	12	CL	1.52	92..	29.1	191	0.71	138	24.8	22.0	97	---	25.5	158	0.59
215		Dowd	Portland	SiL	Low	SiL	10	64	26	98	34	22	12	ML	1.2	94..	----	---	----	---	24.2	19.3	87	---	----	---	---
216		Dowd B.	Ruston	SiL	Low	SiL	10	64	26	97	34	22	12	CL	1.37	97.4	21.7‡	198‡	1.02‡	194‡	24.7	22.4	94	---	----	---	---
217		Dowd B.	Tensbert	SiL	Low	SiL	6	53	41	95	34	21	13	CL	1.37	94.3	28.4	241	1.45	200	28.6	25.2	100	---	----	---	---
218		Dowd B.	Olivier	SiL	Low	SiL	4	44	52	96	44	23	21	CH-ML	1.37	93.4	----	---	----	---	26.7	21.2	93	---	----	---	---
219		Dowd B.	Ar Adaptive	SiL	Low	SiL	4	44	52	96	44	23	21	CH	1.37	93.4	34.7	114	1.21	241	29.0*	28.2	111*	---	----	---	---
220		Maxter	Calhoun	SiL	Low	SiL	5	44	51	96	43	23	20	CH	1.42	94.4	29.7‡	247‡	1.04‡	283‡	32.8	32.2	103	---	----	---	---
221		Maxter	Bibb	SiL	Low	SiL	5	44	51	96	43	23	20	CH	1.42	94.4	37.2‡	239‡	1.13‡	271‡	30.4	28.4	111*	---	----	---	---
222		Providence	Portland	SiL	Low	SiL	5	47	48	96	43	23	20	CH	1.42	94.4	35.7	242	1.42	197	28.2	27.1	96	---	----	---	---
223		Providence	Loring	SiL	Low	SiL	10	47	43	96	41	23	18	CH	1.4	95..	27.4	113	1.10	108	27.8*	26.7	99*	---	28.2	115	1.22
224		Webster	Bibb	SiL	Low	SiL	5	41	54	97	44	24	20	CH	1.4	93.4	34.1	132	0.95	112	----	30.4	---	---	----	---	---
225		Webster	Bibb	SiL	Low	SiL	5	41	54	96	44	24	20	CH	1.4	93.7	34.5	133	0.87	89	32.4	31.5	106	---	----	---	---
226		Webster	Tyler	SiL	Low	SiL	10	42	48	95	46	24	22	CH	1.4	94.3	34..	87	0.86	75	33.5	34.0	104	---	33.7	91	0.77
227		Prentiss	Prentiss	SiL	Low	SiL	36	49	15	79	27	17	10	CL-ML	0.8	110.3	21.5	117	0.41	50	22..	14.3	93	---	21.0	112	0.44
228		Prentiss	Ruston	SiL	Low	L	5	44	51	95	38	24	17	ML	0.8	94.3	27.1	113	...41	103	27.1	24.0	93	---	28.1	103	0.90
229		Prentiss	Bibb	SiL	Low	SiL	4	43	53	96	43	23	20	CH	0.9	93.4	28.6	187	0.91	170	29.2	21.6	91	---	----	---	---
230		Prentiss	Frankstown	SiL	High	SiL	20	57	23	94	34	21	12	CL	0.8	96.9	20..	155	0.67	88	----	20.3	---	---	----	---	---
231		Prentiss	Shubuta	SCL	High	SL	59	19	22	48	23	20	3	SM	1.2	91.6	34.2	245	1.14	232	44..	43.9	113*	---	----	---	---
232		Prentiss	Olivine	L	Low	L	31	43	26	84	34	24	10	CL	1.2	95.	36.5	179	0.43	74	----	23.8	---	10	32.2	179	0.38
233		Adcock	Waverly	SiL	Low	SiL	14	44	42	93	29	21	8	CL	1.1	94.4	28.4	170	0.43	77	27.7*	26.1	93*	7	31.0	148	0.35
234		Adcock	Lexington	SiL	High	SiL	4	31	65	97	49	26	23	CL	0.8	94.1	22.3	142	0.73	104	24.3	24.3	99	---	----	---	---
235		Adcock	Olivier	SiL	Low	SiL	21	44	35	88	29	19	10	CL	0.5	100.0	25.1	159	0.56	90	24.3*	22.4	100*	---	29.1	167	0.53
236	Tenn.	McNairy	Olivier	SiL	Low	SiL	30	42	28	77	27	19	8	CL	0.8	98.0	31.4	99	0.39	53	25.6*	23.5	98*	10	29.0	98	0.32
237		McNairy	Lexington	SiL	High	SiL	18	45	38	97	38	19	19	CL	0.4	93.6	33.5	134	0.77	103	28.2	23.8	97	---	----	---	---
238		Madison	Waverly	SiL	Low	SiL	5	56	39	89	34	22	12	CL	0.8	97.4	28.8	148	0.61	126	31.3	28.0	99	9	30.2	160	0.46
239		Madison	Independence	SL	High	SL	72	21	7	36	14	--	NP	SM	0.7	101.5	----	---	----	---	21.5	13.2	91	---	----	---	---
240		Madison	Lintonia	SiL	High	SiL	25	53	22	85	24	17	12	CL	0.4	107.4	21.0	234	0.42	215	19.3*	17.0	95*	---	----	---	---

(Continued)

* Questionable value, not used in analysis.
‡ Single site reading.

Table B4

Survey Site Data

Condition		MC, % at Atmos Tension		% Sat. at 0 Atmos Tension	High-Moisture Condition At Lowest RCI				Site Environmental Data						
ge RI	RCI	0	0.6		Depth to Water Table, in.	MC %	CI	RI	Lowest RCI	Topographic Position	Slope %	Drainage Surface	Drainage Internal	Vegetation	Land Use	Eng. Conf. Land Form
						Southern Region										
---	---	27.8	26.2	104	---	----	---	----	---	Terrace flat	0	Poor	Medium	Herbaceous	Cultivated hay	IIB2
---	---	30.0	28.2	108	---	----	---	----	---	Terrace flat	0	Poor	Medium	Herbaceous	Lawn	IIB2
---	---	----	27.1	---	---	----	---	----	---	Terrace flat	0	Poor	Medium	Herbaceous	Cultivated, idle	IIB2
.02‡	175‡	30.8	29.5	102	---	30.4	172	1.02	175	Terrace flat	0	Poor	Medium	Herbaceous	Hay (airport)	IIB2
.72‡	126‡	----	----	---	---	----	---	----	---	Terrace flat	0	Good	Good	Herbaceous	Lawn	IIB2
.95	92	57.7	55.7	112*	6	51.7	98	0.93	91	Bottomland flat	0	Poor	Poor	Hardwood, dense understory forest	Undisturbed	IIB3 or 1
.99	71	56.6	55.2	104	6	60.0	73	0.90	66	Bottomland flat	0	Poor	Poor	Hardwood, dense understory forest	Undisturbed	IIB3 or 1
.08	154	48.5	47.2	107	---	----	---	----	---	Bottomland flat	0	Poor	Poor	Hardwood forest	Partly logged	IIB3 or 1
.96	100	50.2	48.4	113*	---	----	---	----	---	Bottomland flat	0	Poor	Poor	Herbaceous	Lawn	IIB4b
.98	94	49.1	46.5	101	---	----	---	----	---	Bottomland flat	0	Poor	Poor	Herbaceous	Grazed	IIB4b
.99	208	24.0	22.8	103	---	25.0	206	1.00	206	Terrace	0	Poor	Good	Herbaceous	Undisturbed	IIB2
.96	129	27.2	26.4	98	---	28.1	119	0.95	113	Terrace	0	Poor	Good	Herbaceous	Grazed	IIB2 or 4a
.97	123	32.2	31.5	95	---	34.1	126	0.96	121	Bottomland flat	0	Poor	Poor	Herbaceous	Undisturbed	IIB2 or 3
.97	122	35.0	34.0	98	---	----	---	----	---	Bottomland flat	4	Poor	Medium	Herbaceous	Undisturbed	IIB4b
.37	47	30.9	26.4	93	---	----	---	----	---	Upland ridge	0	Good	Good	Hardwood forest	Undisturbed	IIIA1
.84	173	28.1	26.8	104	---	----	---	----	---	Upland ridge	3	Good	Poor	Locust plantation	Undisturbed	IIIA1
.69	73	30.8	29.3	100	---	31.2	100	0.64	64	Upland upper slope	35	Good	Med-good	Hardwood forest	Undisturbed	IIIA1
.64‡	156‡	47.6	24.7	96	---	----	---	----	---	Terrace slope	8	Good	Med-good	Herbaceous	Logged	IVC1
---	---	22.3	14.2	85	---	----	---	----	---	Terrace flat	0	Medium	Medium	Herbaceous	Grazed	IIC1
---	---	22.7	15.8	90	---	----	---	----	---	Terrace flat	0	Poor	Poor	Herbaceous	Undisturbed	IIC1
---	---	20.1	24.0	91	---	----	---	----	---	Terrace flat	0	Poor	Poor	Herbaceous	Grazed	IIC1
.55	51	24.1*	27.6	84*	6	33.7	61	0.33	20	Bottomland flat	0	Poor	Poor	Hardwood forest	Undisturbed	IIC1
.52	42	33.0*	32.0	92*	4.5	37.4	67	0.46	31	Bottomland flat	0	Poor	Poor	Hardwood forest	Undisturbed	IIC1
.70	92	26.3	24.4	96	---	----	---	----	---	Upland upper slope	4	Good	Good	Herbaceous, scattered trees	Undisturbed	IVC1
.03	174	47.5	46.8	105	---	----	---	----	---	Upland upper slope	8	Good	Good	Loblolly pine and oak	Undisturbed	IVC1
.62‡	82‡	22.3	20.5	90	---	----	---	----	---	Upland flat	0	Good	Good	Loblolly pine, gum and pine understory	Undisturbed	IIC1
---	---	22.2	17.0	84	----	----	---	----	---	Terrace flat	0	Poor	Poor	Herbaceous	Grazed	IIC1
.18‡	24‡	22.4*	20.4	80*	6	34.0	133	0.18	24	Bottomland flat	0	Poor	Poor	Willow and oak, maytaw understory	Undisturbed	IIC1
.87‡	146‡	24.6	21.7	96	---	----	---	----	---	Upland upper flat	3	Good	Good-med	Planted loblolly pine	Undisturbed	IIC1
.41‡	41‡	24.5	23.3	86	---	24.0	140	0.41	41	Upland upper slope	4	Good	Good-med	Herbaceous	Grazed	IIC1
.16‡	134‡	21.4	15.8	87	---	----	---	----	---	Terrace slope	4	Good	Good	Loblolly pine, sweet gum, and oak	Undisturbed	IIC1
.55	73	21.2	14.6	82	---	----	---	----	---	Terrace flat	0	Good	Good	Herbaceous	Undisturbed	IIC1
.35	66	19.3*	17.8	84*	12	22.4	159	0.26	36	Terrace flat	0	Poor	Poor	Herbaceous with some trees	Undisturbed	IIC1
.63	113	16.2	15.3	80	---	----	---	----	---	Upland upper flat	2	Good	Good	Herbaceous	Undisturbed	IVC2
.97‡	233‡	17.7	16.8	79	---	----	---	----	---	Terrace slope	4	Medium	Poor	Herbaceous	Undisturbed	IVC2
---	---	16.5	13.4	83	---	----	---	----	---	Upland upper slope	4	Good	Good	Loblolly pine, herbaceous understory	Undisturbed	IVC2
.88‡	240‡	22.5	15.5	90	---	----	---	----	---	Upland upper slope	6	Good	Good	Longleaf pine, herbaceous understory	Undisturbed	IIC1
.96‡	10‡	43.6	34.1	93	---	----	---	----	---	Bottomland flat	0	Good	Good	Hardwood forest	Undisturbed	IIB1
.92‡	174‡	20.2	21.3	82	---	----	---	----	---	Upland upper slope	4	Good	Medium	Longleaf pine, herbaceous understory	Undisturbed	IIC1
.-	---	24.3	23.1	104	---	----	---	----	---	Bottomland	0	Poor	Good	Herbaceous	Undisturbed	IIB2
.68	111	23.1	21.2	92	---	----	---	----	---	Upland upper slope	6	Good	Medium	Herbaceous	Grazed	IIC1
.84	66	24.9	20.1	100	25	24.1	148	0.91	134	Upland flat	0	Poor	Poor	Herbaceous	Grazed	IIC1
.-	---	27.6	24.2	102	---	----	---	----	---	Terrace flat	0	Poor	Poor	Loblolly pine	Undisturbed	IIC1
.-	---	21.9	20.2	96	---	----	---	----	---	Terrace flat	0	Poor	Poor	Herbaceous	Grazed	IIC1
.40	59	24.2	22.3	89	---	27.4	143	0.28	69	Terrace flat	0	Poor	Poor	Herbaceous	Grazed	IIC1
.56‡	81‡	22.6	21.1	91	---	----	---	----	---	Terrace flat	0	Poor	Medium	Loblolly pine, herbaceous understory	Undisturbed	IIC1
.92‡	152‡	24.4	21.1	93	---	----	---	----	---	Upland flat	0	Good-med	Good-med	Herbaceous	Lawn	IVC3
.38‡	16‡	22.5	21.1	94	---	22.8	142	0.68	104	Upland upper slope	3	Good	Poor-med	Herbaceous	Hay	IVC3
.-	---	18.1	16.1	92	---	----	---	----	---	Upland upper slope	4	Good	Poor	Herbaceous	Hay	IVC3
.36	101	33.4	29.4	96	---	----	---	----	---	Bottomland flat	0	Poor	Poor	Herbaceous	Grazed	IIB1
.87	64	37.1	31.2	99	---	----	---	----	---	Upland upper slope	5	Good	Good	Mixed pine-hardwood	Undisturbed	IIIA1
.93	112	32.4	27.5	98	---	----	---	----	---	Upland upper slope	5	Good	Good-med	Mixed pine-hardwood, herbaceous understory	Grazed	IVC3
.-	---	34.5	30.1	103	---	----	---	----	---	Bottomland flat	0	Poor	Medium	Herbaceous	Fallow	IIB1
.41	101	36.4	34.5	105	---	----	---	----	---	Terrace	0	Medium	Poor	Hardwood forest	Grazed	IVC3
.97	101	29.4	28.9	97	---	29.4	159	0.82	96	Terrace flat	2	Good	Poor	Herbaceous	Grazed	IIB1
.86	56	31.2	28.0	98	---	29.8	148	0.76	91	Upland upper slope	4	Good	Poor	Herbaceous	Hay	IVC3
.82	69	31.2	27.5	98	16	29.1	142	0.79	90	Upland flat	0	Poor	Poor	Herbaceous	Hay	IVC3
.97	48	34.1	34.0	102	---	----	---	----	---	Upland flat	0	Medium	Poor	Hardwood forest	Undisturbed	IVC3
.42	173	28.1*	25.7	93*	---	31.0	220	1.26	243	Upland upper slope	2	Good	Poor	Loblolly-shortleaf pine, brush understory	Undisturbed	IVC1
.99	171	----	36.4	---	---	----	---	----	---	Upland flat	0	Poor	Med-good	Loblolly pine	Undisturbed	IVC1
.97	7	13.4*	13.4	93*	---	42.1	12	0.04	01	Upland flat	0	Poor	Poor	Mixed hardwood and pine, hardwood understory	Undisturbed	IVC1
.83	143	25.6	24.6	91	---	27.0	128	1.00	128	Upland flat	0	Poor	Poor	Herbaceous	Cultivated, idle	IVC1
.21	18	24.6	22.1	87	---	27.1	150	0.59	93	Terrace flat	2	Good-med	Medium	Herbaceous	Hay	IIC1
-	---	24.2	19.3	97	---	----	---	----	---	Bottomland flat	0	Poor	Medium	Herbaceous	Cultivated, idle	IIB1
.92‡	15‡	24.7	22.4	93	---	----	---	----	---	Terrace slope	7	Good	Good	Herbaceous	Hay	IIC1
.8	82	27.6	25.2	100	---	----	---	----	---	Upland upper slope	3	Good	Poor	Herbaceous	Grazed	IVC3
.1	241	29.8*	28.2	111*	---	----	---	----	---	Upland flat	0	Poor	Poor	Herbaceous	Undisturbed	IVC3
.6‡	203‡	32.6	31.2	105	---	----	---	----	---	Upland upper flat	0	Good	Med-poor	Herbaceous	Grazed	IVA6
.5‡	47‡	31.4	28.4	114*	---	----	---	----	---	Upland upper flat	4	Poor	Poor	Herbaceous	Grazed	IVA6
.2	44	22.1	21.1	98	---	----	---	----	---	Bottomland flat	3	Poor	Medium	Herbaceous	Grazed, experimental plot	IIB1
.0	22	21.8*	24.3	93*	---	27.6	95	0.26	25	Terrace flat	0	Medium	Med-good	Herbaceous	Cultivated, idle	IIB1
.5	128	----	31.4	---	---	----	---	----	---	Upland flat	0	Poor	Poor	Hardwood forest	Undisturbed	IVC3
.7	31	32.4	31.5	106	---	----	---	----	---	Upland upper slope	3	Medium	Poor	Herbaceous, few pine seedlings	Undisturbed	IVC3
.6	78	33.3	34.0	104	---	33.7	91	0.77	71	Terrace flat	0	Poor	Poor	Herbaceous	Cultivated, idle	IIB1
.1	54	22.1	19.3	93	---	24.1	122	0.44	54	Upland flat	0	Poor	Poor	Herbaceous	Lawn	IVC3
.1	103	27.4	24.1	92	---	27.1	135	0.63	85	Bottomland flat	0	Poor	Poor	Hardwood forest	Undisturbed	IIB1
.7	170	25.2	21.6	91	---	----	---	----	---	Upland ridge	3	Good	Good	Loblolly pine, herbaceous understory	Undisturbed	IVC3
.7	93	----	26.3	---	---	----	---	----	---	Upland flat	0	Medium	Medium	Herbaceous	Cultivated, idle	IVC3
.4	256	43.1	41.4	113*	---	----	---	----	---	Upland upper slope	8	Good	Good	Hardwood forest	Undisturbed	IVC3
.3	74	43.8	----	---	12	32.2	170	0.53	90	Bottomland flat	0	Poor	Poor	Herbaceous	Grazed	IIB1
.3	72	27.4*	26.1	93*	7	31.0	148	0.52	76	Bottomland flat	0	Poor	Poor	Herbaceous	Cultivated, idle	IIB1
.4	24	24.7	24.5	95	---	----	---	----	---	Upland upper slope	4	Good	Good	Mixed pine-hardwood	Undisturbed	IVC3
.5	93	24.3*	22.4	109*	---	25.1	167	0.63	91	Terrace flat	1	Poor	Poor	Herbaceous	Hay	IIC1
.7	33	25.8*	23.5	98*	---	27.1	93	0.32	31	Terrace flat	2	Poor	Poor	Herbaceous	Grazed	IIC1
.3	263	28.2	25.8	97	---	----	---	----	---	Upland ridge	3	Good	Good	Hardwood forest	Undisturbed	IVC3
.7	126	31.3	28.1	93	9	34.2	180	0.68	74	Bottomland flat	0	Poor	Poor	Herbaceous	Grazed	IIB1
.1	---	21.3	19.2	91	---	----	---	----	---	Terrace slope	2	Good	Good	Herbaceous	Grazed	IIC1
.5	219	19.9*	17.3	95*	---	----	---	----	---	Terrace slope	3	Med-good	Good	Herbaceous	Cultivated, grazed	IIC1

(Continued)

Table B4 (Continued)

Site No.	Location: State	Location: County or Parish	USDA Soil Map Identification: Soil Series	0- to 6-in. USDA Soil Type	Topography Class	Soil Data, 6- to 12-in. Layer: USDA Texture by Wt, %: Type	Sand	Silt	Clay	USCS: % Fines	Atterberg Limits: LL	PL	PI	USCS Type	Organic Cont %	Dry Density lb/cu ft	Wet-Season Condition: Average: MC, %	CI	RI	RCI	MC, % at Atmos Tension: 0	0.06	% Sat. at 0 Atmos Tension	High-Moisture Condition: At Lowest RCI: Depth to Water Table, in.	MC %	CI	RI
																								Southern Region (Continued)				
241	Tenn.	Madison	Carroll	SiL	Low	SiL	10	68	22	96	30	21	9	CL	0.2	99.9	22.8	238	0.71	166	25.4	23.4	102	---	----	---	---
242		Haywood	Grenada	SiL	High	SiL	3	73	24	100	33	22	11	CL	0.4	92.4	28.1	153	0.69	106	29.4	26.3	98	---	----	---	---
243		Haywood	Waverly	SiL	Low	SiL	25	56	19	81	28	23	5	ML	0.8	93.0	23.6‡	237‡	0.50‡	118‡	30.2	26.4	102	---	----	---	---
244		Fayette	Memphis	SiL	High	SiL	8	67	25	99	34	21	13	CL	0.6	85.5	26.2	149	0.70	103	35.0	28.1	99	---	----	---	---
245		Fayette	Waverly	SiL	Low	SiL	6	81	13	100	29	25	4	ML	0.6	91.8	30.6	281	0.53	149	30.2	27.8	100	0	31.4	281	0.3
246	Miss.	Marshall	Calloway	SiL	Low	SiL	10	71	19	97	34	24	10	ML	0.6	88.0	30.2	189	0.55	103	----	29.4	---	---	----	---	---
247		Marshall	Grenada	SiL	Low	SiL	8	67	25	98	34	23	11	CL	0.5	92.4	29.8	161	0.69	111	29.0	27.1	97	---	30.9	155	0.6
248		Marshall	Calloway	SiL	Low	SiL	8	68	24	98	35	24	11	ML	0.5	91.1	31.0	164	0.65	107	30.0*	28.0	98*	---	31.2	160	0.5
249		Marshall	Grenada	SiL	High	SiL	7	70	23	99	34	23	11	CL	0.7	92.4	27.9	128	0.55	123	29.4	27.7	98	---	----	---	---
250		Panola	Loring	SiL	High	SiCL	6	65	29	97	--	--	NP	ML	0.5	86.8	26.4	185	0.76	141	31.0	27.3	91	---	----	---	---
251		Panola	Collins	Si	Low	Si	10	81	9	95	--	--	NP	ML	1.8	83.7	----	---	----	---	38.3	30.7	105	---	----	---	---
252		Panola	Carroll	SiL	Low	SiL	10	75	15	96	34	19	15	CL	0.6	86.2	23.7‡	300+‡	0.86‡	258+‡	----	27.4	---	---	----	---	---
253		Panola	Carroll	SiL	Low	SiL	10	77	13	99	29	24	5	ML	0.5	94.3	26.5	279+	0.59	171+	28.4	25.7	100	---	----	---	---
254		Panola	Memphis	SiL	High	SiCL	5	64	31	100	42	24	18	CL	0.4	91.1	----	---	----	---	37.6	28.1	106	---	----	---	---
255		Panola	Olivier	SiL	Low	SiL	13	67	20	92	34	23	11	CL	0.6	89.9	27.7	127	0.54	68	----	27.4	---	---	28.0	108	0.4
256		Panola	Hymon	SiL	Low	SiL	15	72	13	95	22	20	2	ML	0.6	92.4	----	---	----	---	33.9	26.0	103	---	----	---	---
257		Quitman	Dundee	SiL	Low	SiCL	13	55	32	98	46	24	22	CL	1.4	93.6	----	---	----	---	30.0	28.2	103	---	----	---	---
258		Quitman	Dundee	SiL	Low	SiCL	11	54	35	96	43	25	18	CL	0.6	95.5	----	---	----	---	32.4	29.3	115*	---	----	---	---
259		Quitman	Dowling	C	Low	C	20	25	55	85	91	42	49	MH	5.1	59.3	----	---	----	---	71.5	68.6	122*	---	----	---	---
260		Quitman	Sharkey	SiC	Low	C	9	33	53	99	82	28	54	CH	1.2	83.7	----	---	----	---	43.0	40.1	116*	---	----	---	---
261		Quitman	Dundee	SiL	Low	CL	20	51	29	97	42	22	20	CL	0.9	95.5	----	---	----	---	30.4	28.6	109	---	----	---	---
301	Ala.	Washington	Cuthbert	SL	High	SCL	50	26	24	62	26	15	11	CL	0.6	100.5	19.1	161	0.86	138	20.9	16.5	85	---	----	---	---
302		Washington	Rains	SL	Low	SL	60	32	8	54	17	--	NP	ML	0.8	98.6	21.6	122	0.57	72	22.2	19.6	87	26	22.1	112	0.3
303		Washington	Lynchburg	SL	Low	SL	64	25	11	53	18	--	NP	ML	1.0	106.8	19.6	134	0.56	77	19.9	16.7	96	---	22.3	100	0.5
304		Washington	Iuka	SiL	Low	SiCL	11	57	32	96	44	23	21	CL	1.2	92.4	28.6‡	172‡	0.88‡	151‡	29.5	27.7	99	---	28.6	172	0.8
305		Clarke	Kershaw	S	High	S	93	4	3	10	--	--	NP	SP-SM	0.8	95.5	8.0‡	133‡	1.0‡	145‡	24.1	8.2	87	---	----	---	---
306		Clarke	Greenville	L	High	CL	46	27	33	64	33	13	20	CL	0.7	97.4	21.4‡	149‡	0.88‡	131‡	23.4	20.1	89	---	----	---	---
307		Clarke	Magnolia	LS	High	SL	70	16	14	45	17	--	NP	SM	1.0	94.9	----	---	----	---	24.4	16.9	87	---	----	---	---
308		Clarke	Sawyer	LS	High	LS	81	14	5	24	15	--	NP	SM	0.7	94.3	17.9‡	128‡	1.4‡	179‡	27.1	15.6	95	---	----	---	---
309		Clarke	Orangeburg	LS	High	SL	78	13	9	27	12	--	NP	SM	1.0	108.0	----	---	----	---	20.7	12.2	103	---	----	---	---
310		Monroe	Cahaba	LS	Low	SL	74	17	9	33	17	--	NP	SM	0.6	95.5	----	---	----	---	23.2	16.0	85	---	----	---	---
311		Monroe	Ora	SL	Low	SCL	50	27	23	55	24	12	12	CL	0.70	98.0	16.6‡	113‡	1.11‡	125‡	22.5	15.8	87	---	----	---	---
312		Conecuh	Red Bay	SL	High	SL	68	12	20	38	21	11	10	SC	0.46	84.9	18.2‡	133‡	0.90‡	120‡	31.6	19.1	89	---	----	---	---
313		Conecuh	Norfolk	LS	High	LS	79	15	6	27	13	--	NP	SM	0.46	106.8	----	---	----	---	19.7	12.9	95	---	----	---	---
314		Conecuh	Bibb	SL	Low	SL	72	20	8	35	--	--	NP	SM	1.35	95.5	----	---	----	---	23.1	18.1	83	---	----	---	---
315		Coffee	Orangeburg	S	High	LS	88	5	7	20	14	--	NP	SM	0.46	101.1	----	---	----	---	21.1	9.3	88	---	----	---	---
316		Henry	Norfolk	SL	High	SL	73	14	13	31	13	--	NP	SM	0.70	114.9	----	---	----	---	15.6	13.8	93	---	----	---	---
317		Henry	Norfolk	LS	High	LS	83	9	8	24	13	--	NP	SM	0.46	106.1	----	---	----	---	17.6	10.9	83	---	----	---	---
318		Henry	Ruston	SL	High	SL	76	12	12	28	14	--	NP	SM	0.70	106.8	----	---	----	---	17.2	12.4	83	---	----	---	---
319		Houston	Ruston	SiC	Low	C	14	35	48	93	61	38	23	OH	11.33	62.4	57.3	84	0.62	52	56.6	52.8	---	16	59.1	80	0.6
320		Houston	Norfolk	SL	High	SL	73	10	17	32	15	--	NP	SM	0.78	108.6	----	---	----	---	16.4	14.5	93	---	----	---	---
321	Fla.	Jackson	Faceville	LS	High	SCL	70	9	21	37	14	--	NP	SM	0.78	94.3	17.3‡	127‡	0.91‡	116‡	24.8	20.2	87	---	----	---	---
322		Jackson	Grady	SL	Low	SL	75	8	17	17	17	16	1	SM	0.95	106.8	13.2‡	137‡	0.91‡	125‡	17.4	14.9	85	---	----	---	---
323		Jackson	Klej	LS	High	LS	84	9	7	23	14	--	NP	SM	1.05	102.4	----	---	----	---	19.8	13.8	85	---	----	---	---
324		Gadsden	Congaree	CL	Low	CL	34	27	39	74	38	17	19	CL	1.25	96.1	24.5‡	241‡	0.74‡	178‡	24.8	23.9	91	---	24.5	241	0.7
325		Gadsden	Vaucluse	S	High	LS	86	5	7	23	13	--	NP	SM	0.32	106.8	----	---	----	---	18.4	14.1	89	---	----	---	---
326		Gadsden	Barth	LS	Low	S	88	8	4	27	15	--	NP	SM	0.46	98.0	----	---	----	---	20.8	15.6	80	---	----	---	---
327		Gadsden	Red Bay	LS	High	SL	86	9	11	20	14	--	NP	SM	0.62	99.9	----	---	----	---	20.5	15.7	82	---	----	---	---
328		Leon	Faceville	SL	High	SCL	62	5	33	41	31	--	NP	SM	0.70	90.5	23.8‡	162‡	0.85‡	138‡	29.5	27.5	94	---	----	---	---
329		Leon	Ochlockonee	SL	Low	SCL	69	11	20	37	21	--	NP	SM	1.05	90.5	----	---	----	---	27.4	21.0	87	---	----	---	---
330		Jefferson	Plummer	LS	High	LS	88	6	6	15	14	--	NP	SM	1.98	99.9	----	---	----	---	21.4	14.2	86	---	----	---	---
331		Jefferson	Lakeland	S	High	S	90	5	5	16	14	--	NP	SM	0.70	100.5	----	---	----	---	22.3	13.2	91	---	----	---	---
332		Jefferson	Leon	S	Low	S	91	6	4	16	15	--	NP	SM	1.45	95.5	----	---	----	---	23.4	13.2	84	---	----	---	---
333		Madison	Lakeland	S	High	S	91	4	5	14	14	--	NP	SM	0.55	97.4	----	---	----	---	23.7	10.0	90	---	----	---	---
334		Madison	Jonesville	LS	High	LS	86	7	7	18	14	--	NP	SM	2.87	84.9	19.0‡	201‡	1.43‡	299‡	30.0	20.7	84	---	----	---	---
335	Ga.	Lowndes	Goldsboro	LS	High	S	94	3	3	13	14	--	NP	SM	0.78	102.1	----	---	----	---	19.9	13.3	79	---	----	---	---
336		Lowndes	Rains	SL	Low	S	72	9	2	33	16	--	NP	SM	0.25	94.3	----	---	----	---	23.3	12.7	78	---	----	---	---
337		Berrien	Lynchburg	LS	Low	LS	90	5	5	23	13	--	NP	SM	0.70	101.8	----	---	----	---	19.6	12.2	83	---	----	---	---
338		Berrien	Lynchburg	LS	Low	LS	87	7	6	22	12	--	NP	SM	0.62	104.3	----	---	----	---	18.9	12.4	65	---	----	---	---
339		Tift	Izagora	SL	Low	SL	72	11	17	33	17	11	6	SM-SC	0.38	114.2	----	---	----	---	14.4	11.0	65	---	----	---	---
340		Tift	Irvington	LS	High	SL	80	8	12	25	22	13	9	SC	0.78	112.4	----	---	----	---	18.4	12.6	103	---	----	---	---
341		Crisp	Tifton	LS	High	SL	76	8	16	31	19	12	5	SM	0.55	107.4	----	---	----	---	17.9	10.4	88	---	----	---	---
342		Crisp	Grady	L	High	CL	48	22	30	47	27	15	12	CL	1.25	112.4	14.2‡	156‡	0.82‡	128‡	16.3	13.7	91	---	----	---	---
343		Crisp	Grady	SCL	Low	SCL	63	22	15	33	14	--	NP	SM	0.70	111.1	----	---	----	---	16.9	13.7	92	---	----	---	---
344		Sumter	Greenville	CL	High	CL	42	21	37	40	21	12	9	SC	0.70	107.4	17.7‡	167‡	0.94‡	168‡	19.1	16.2	94	---	----	---	---
345		Sumter	Magnolia	LS	High	SCL	68	11	21	32	21	12	9	SC	0.38	107.4	----	---	----	---	18.2	14.8	90	---	----	---	---
346		Sumter	Henderson	SL	High	SL	57	23	20	48	18	10	8	SC	0.33	102.4	20.1‡	157‡	0.85‡	133‡	21.0	17.8	91	---	----	---	---
347		Quitman	Byars	L	Low	SCL	54	34	42	76	34	22	12	CL	2.87	99.3	25.4‡	192‡	0.86‡	165‡	23.2	21.5	92	21	25.9	192	0.8
348	Ala.	Barbour	Lakeland	LS	High	LS	94	4	2	15	15	--	NP	SM	0.78	89.9	----	---	----	---	29.3	22.9	93	---	----	---	---
349		Barbour	Ruston	LS	High	LS	84	12	4	24	15	--	NP	SM	0.86	97.4	----	---	----	---	23.6	18.0	90	---	----	---	---
350		Bullock	Cuthbert	L	High	CL	38	40	22	72	44	23	21	CL	0.86	74.3	39.8‡	148‡	1.07‡	158‡	41.7	33.8	102	---	----	---	---
351		Bullock	Mantachie	SL	Low	CL	69	19	12	35	18	--	NP	SM	0.86	94.5	----	---	----	---	28.6	23.1	91	---	----	---	---
352		Bullock	Susquehanna	SCL	High	C	42	13	45	68	57	28	29	CH	0.55	83.7	33.2	168	1.09	185	38.0	36.7	101	---	----	---	---
353		Bullock	Boswell	LS	High	SCL	61	11	28	42	39	18	21	CL	0.86	84.9	35.6‡	214‡	0.98‡	210‡	36.5	35.2	102	---	----	---	---
354		Dallas	Bibb	S	Low	S	95	3	2	25	19	--	NP	SM	0.55	91.8	----	---	----	---	26.3	23.0	87	---	----	---	---
355		Dallas	Byars	SL	Low	SL	63	30	7	44	--	--	NP	SM	1.25	94.9	20.3	86	0.44	38‡	24.4	16.6	87	8	20.3	86	0.4
356		Dallas	Flint	SL	High	SL	63	23	12	49	17	--	NP	SM	0.32	89.3	18.5	140	0.66	95‡	29.4	22.8	91	---	----	---	---
357		Dallas	Geiger	CL	Low	CL	42	27	31	62	49	28	25	CL	1.25	89.3	27.8	164	1.07	177	30.0	22.4	94	---	----	---	---
358		Dallas	Stough	SL	Low	SL	73	20	7	33	13	--	NP	SM	0.38	104.9	18.3	155	1.39	215	17.7	12.8	81	13	19.5	139	1.5
359		Dallas	Sumter	SiCL	Low	SiCL	13	56	31	92	51	24	27	CH	1.52	93.6	27.4‡	266‡	0.96‡	255‡	29.6	28.8	96	---	----	---	---
360		Dallas	Catalpa	SiL	Low	SiCL	1	54	45	96	63	27	36	CH	2.35	79.9	35.8	154	1.06	162	40.7	40.2	99	---	----	---	---
361		Perry	Sumter	SiCL	Low	SiCL	13	47	40	95	60	22	38	CH	0.70	91.1	32.2‡	240‡	1.03‡	247‡	31.2	30.7	99	---	32.2	240	1.0
362		Marengo	Sumter	SiL	High	SiCL	15	51	34	90	58	26	32	CH	1.45	86.2	35.3‡	197‡	1.00‡	197‡	34.8*	34.3	90*	---	----	---	---
364		Marengo	Eutaw	CL	Low	CL	20	42	38	78	49	20	29	CL	0.55	92.4	28.5	169	1.13	193	29.5	29.0	99	---	29.7	160	1.0
365		Sumter	Huckabee	LS	Low	LS	81	13	6	26	16	--	NP	SM	0.95	97.4	----	---	----	---	23.4	15.4	89	---	----	---	---
366		Sumter	Byars	SCL	Low	CL	45	21	34	68	40	19	21	CL	0.78	93.0	27.3	171	1.08	189	28.5	27.6	97	---	29.0	146	0.8
367		Sumter	Pheba	SL	Low	SL	82	10	8	45	13	--	NP	SM	0.38	101.1	18.7	125	1.23	152	21.1	17.4	88	---	20.9	85	1.2
368		Sumter	Bibb	SiL	Low	L	43	37	20	75	20	10	10	CL	0.86	93.6	30.2‡	46‡	0.56‡	26‡	25.6*	24.3	89*	1	30.2	46	0.4
369		Sumter	Cuthbert	SL	High	SCL	52	23	25	59	31	15	16	CL	0.62	102.4	21.5	209	0.99	208	21.2*	20.0	91*	---	----	---	---

(Continued)

* Questionable value, not used in the analysis.
‡ Single site reading.

Table B4 (Continued)

Condition ge RI	RCI	MC, % at Atmos Tension 0	0.06	% Sat. at 0 Atmos Tension	High-Moisture Condition At Lowest RCI: Depth to Water Table, in.	MC %	CI	RI	Lowest RCI	Topographic Position	Slope %	Drainage: Surface	Internal	Vegetation	Land Use	Eng. Conf. Land Form
					Southern Region (Continued)											
.71	166	25.4	23.4	102	---	----	---	----	---	Terrace slope	3	Poor	Poor	Herbaceous	Hay	IIC1
.69	106	29.4	26.3	98	---	----	---	----	---	Upland upper slope	6	Good	Medium	Herbaceous with some trees	Undisturbed	IVC3
.50+	118+	30.2	26.4	102	---	----	---	----	---	Bottomland flat	0	Poor	Poor	Herbaceous	Cultivated, idle	IIB1
.70	103	35.0	28.1	99	---	----	---	----	---	Upland upper slope	6	Good	Good	Hardwood forest	Undisturbed	IVC3
.53	149	30.2	27.8	100	0	31.4	281	0.36	101	Bottomland flat	0	Poor	Poor	Herbaceous	Lawn	IIB1
.55	103	----	29.4	---	---	----	---	----	---	Upland flat	0	Poor	Poor	Herbaceous	Lawn	IIIA2
.69	111	29.0	27.1	97	---	30.9	155	0.68	105	Upland flat	0	Poor	Medium	Herbaceous	Grazed	IIIA1
.65	107	30.0+	28.0	98+	---	31.2	160	0.58	93	Upland flat	3	Poor	Poor	Herbaceous	Grazed	IIIA1
.55	123	29.4	27.7	98	---	----	---	----	---	Upland upper slope	6	Good	Medium	Herbaceous	Grazed	IIIA1
.76	141	31.0	27.3	91	---	----	---	----	---	Upland upper slope	3	Good	Good	Hardwood forest	Undisturbed	IIIA1
---	---	38.3	30.7	105	---	----	---	----	---	Bottomland flat	0	Poor	Medium	Herbaceous	Airfield	IIC1
.86+	258+#	----	27.4	---	---	----	---	----	---	Terrace flat	0	Poor	Poor	Hardwood forest	Undisturbed	IIC1
.59	171+	28.4	25.7	100	---	----	---	----	---	Bottomland flat	3	Medium	Medium	Herbaceous	Grazed	IIC1
---	---	37.6	28.2	106	---	----	---	----	---	Upland upper slope	5	Good	Good	Herbaceous	Grazed	IIIA1
.54	68	----	27.4	---	---	28.0	108	0.49	53	Terrace flat	1	Poor	Poor	Herbaceous	Grazed	IIC1
---	---	30.9	26.0	103	---	----	---	----	---	Bottomland flat	0	Poor	Medium	Herbaceous with some trees	Grazed	IIC1
---	---	30.0	28.2	103	---	----	---	----	---	Terrace flat	0	Poor	Poor-med	Herbaceous with some trees	Grazed	IIB1
---	---	32.4	29.3	115+	---	----	---	----	---	Terrace flat	0	Poor	Poor	Herbaceous	Lawn	IIB2 or 4b
---	---	71.5	68.6	122+	---	----	---	----	---	Bottomland flat	0	Poor	Poor	Cypress, gum, elm, and hackberry	Undisturbed	IIB4b
---	---	43.0	40.1	116+	---	----	---	----	---	Bottomland flat	0	Poor	Poor	Herbaceous	Grazed	IIB3
---	---	30.4	28.6	109	---	----	---	----	---	Terrace flat	0	Poor	Medium	Pecan grove, herbaceous	Grazed	IIC1
86	138	20.9	16.5	85	---	----	---	----	---	Upland upper slope	15	Good	Poor	Slash pine and red oak	Undisturbed	IVC3
57	72	22.2	19.6	87	26	22.1	112	0.35	39	Upland flat	0	Poor	Poor	Mixed pine and oak	Undisturbed	IVC3
56	77	19.9	16.7	96	---	22.3	100	0.53	53	Upland upper slope	5	Good	Good	Herbaceous with some trees	Grazed	IVC3
88+	151+	29.5	27.7	99	---	28.6	172	0.88	151	Bottomland flat	0	Medium	Medium	Herbaceous	Grazed	IIB1
09+	145+	24.1	8.2	87	---	----	---	----	---	Upland flat	6	Good	Good	Hardwood forest, hardwood and pine understory	Undisturbed	IIC1
88+	131+	23.4	20.1	89	---	----	---	----	---	Upland upper slope	5	Good	Good	Herbaceous	Grazed	IVC3
---	---	24.4	16.9	87	---	----	---	----	---	Upland upper slope	12	Good	Good	Pine forest	Undisturbed	IVC3
40+	179+	27.1	15.6	96	---	----	---	----	---	Upland upper flat	5	Good	Medium	Loblolly pine and dogwood, hickory and oak understory	Undisturbed	IVC2
---	---	20.7	12.2	103	---	----	---	----	---	Upland upper slope	20	Good	Good	Pine forest	Undisturbed	IIC1
---	---	23.2	16.0	85	---	----	---	----	---	Terrace flat	4	Good	Good	Herbaceous	Grazed	IIC1
11+	125+	22.5	15.8	87	---	----	---	----	---	Upland flat	0	Poor	Medium	Herbaceous	Cultivated, grazed	IIC1
90+	120+	31.6	19.1	89	---	----	---	----	---	Upland upper slope	5	Good	Good	Herbaceous with some trees	Cultivated, idle	IVC3
---	---	19.7	12.9	95	---	----	---	----	---	Upland upper slope	15	Good	Good	Mixed hardwood and pine	Undisturbed	IVC3
---	---	23.1	18.1	83	---	----	---	----	---	Bottomland flat	0	Poor	Poor	Herbaceous	Grazed	IIB1
---	---	21.1	9.3	88	---	----	---	----	---	Upland upper slope	20	Good	Good	Herbaceous	Cultivated, idle	IVC3
---	---	15.6	13.8	93	---	----	---	----	---	Upland flat	0	Good	Good	Herbaceous	Lawn	IVC3
---	---	17.6	10.3	83	---	----	---	----	---	Upland flat	0	Good	Good	Herbaceous	Grazed	IVC3
---	---	17.2	12.4	83	---	----	---	----	---	Upland upper slope	8	Good	Good	Herbaceous	Cultivated, idle	IVC3
62	52	56.6	52.8	---	16	59.1	60	0.61	52	Bottomland flat	0	Poor	Poor	Cypress forest	Undisturbed	VC3
---	---	18.4	14.5	93	---	----	---	----	---	Upland flat	0	Good	Good	Planted pine	Undisturbed	IVC3
91+	116+	24.8	20.2	97	---	----	---	----	---	Upland upper slope	5	Good	Good	Herbaceous	Grazed	IVC3
91+	125+	17.4	14.9	85	---	----	---	----	---	Upland depression	0	Poor	Poor	Mixed hardwood, pine brush understory	Undisturbed	IVC3
---	---	19.8	13.8	85	---	----	---	----	---	Upland flat	0	Poor	Medium	Pine forest	Grazed	IVC2
74+	178+	24.8	23.9	91	---	24.5	241	0.74	178	Bottomland flat	0	Poor-med	Medium	Oak, willow, brush understory	Undisturbed	IIB1
---	---	18.4	14.1	89	---	----	---	----	---	Upland upper slope	12	Good	Good-med	Planted slash pine	Undisturbed	IVC2
---	---	20.8	15.6	80	---	----	---	----	---	Terrace flat	5	Poor-med	Med-poor	Herbaceous with some trees	Hay	IIC1
---	---	20.5	15.7	82	---	----	---	----	---	Upland flat	0	Medium	Good	Herbaceous	Cultivated, idle	IVC3
85+	138+	29.5	27.5	94	---	----	---	----	---	Upland upper slope	3	Med-good	Med-good	Slash pine with herbaceous understory	Undisturbed	IVC
---	---	27.4	21.0	87	---	----	---	----	---	Bottomland depression	0	Poor-med	Med-good	Herbaceous	Grazed	IIC1
---	---	21.4	14.2	86	---	----	---	----	---	Upland depression	0	Poor-med	Poor-med	Mixed, pine & hardwood	Undisturbed	IVC2
---	---	22.3	13.2	91	---	----	---	----	---	Upland flat	0	Medium	Good	Herbaceous	Grazed	IVC2
---	---	23.4	13.2	84	---	----	---	----	---	Upland flat	0	Poor	Poor-med	Longleaf pine, palmetto, and bracken, fern understory	Undisturbed	IVC2
---	---	23.7	10.0	80	---	----	---	----	---	Upland upper slope	12	Good	Good	Planted slash pine	Undisturbed	IVC2
49+	299+	30.0	20.7	84	---	----	---	----	---	Upland upper slope	3	Good	Good	Herbaceous, hay and oats	Cultivated	IVC2
---	---	19.9	13.3	79	---	----	---	----	---	Upland flat	1	Medium	Medium	Herbaceous	Cultivated, idle	IIC1
---	---	23.3	12.7	78	---	----	---	----	---	Upland depression	1	Poor	Poor	Slash pine, herbaceous understory	Undisturbed	IIC1
---	---	19.6	12.2	83	---	----	---	----	---	Upland flat	1	Poor-med	Medium	Pine forest, herbaceous understory	Grazed	IIC1
---	---	18.9	12.4	85	---	----	---	----	---	Upland flat	1	Poor	Med-poor	Herbaceous	Grazed	IIC1
---	---	14.4	11.0	85	---	----	---	----	---	Terrace flat	1	Poor	Poor-med	Herbaceous	Undisturbed	IIC3
---	---	18.4	12.6	103	---	----	---	----	---	Upland upper slope	5	Good	Medium	Herbaceous	Grazed	IVC3
---	---	17.9	13.4	98	---	----	---	----	---	Upland upper slope	5	Good	Good	Herbaceous	Undisturbed	IVC3
82+	128+	16.3	13.7	91	---	----	---	----	---	Upland depression	0	Poor	Poor-med	Slash pine, herbaceous understory	Undisturbed	IVC3
---	---	16.9	13.7	92	---	----	---	----	---	Upland flat	1	Medium	Poor-med	Herbaceous	Cultivated, idle	IVC3
90+	168+	19.1	16.2	94	---	----	---	----	---	Upland flat	5	Good	Good	Planted pine	Undisturbed	IVC3
---	---	18.2	14.5	90	---	----	---	----	---	Upland upper slope	5	Good	Good	Herbaceous	Cultivated, idle	IVC3
85+	133+	21.0	17.8	91	---	----	---	----	---	Upland upper slope	4	Good	Medium	Herbaceous	Cultivated, idle	IVC3
86+	169+	23.2	21.5	92	21	24.1	192	0.86	165	Terrace flat	1	Poor	Poor	Herbaceous	Grazed	IIC1
---	---	24.3	22.9	93	---	----	---	----	---	Upland flat	1	Good	Good	Herbaceous with some trees	Undisturbed	IVC3
---	---	23.6	18.0	90	---	----	---	----	---	Upland upper slope	5	Good	Good	Slash and shortleaf pine, herbaceous understory	Undisturbed	IVC3
97+	158+	41.7	34.8	102	---	----	---	----	---	Upland upper slope	5	Good	Poor	Shortleaf pine, herbaceous understory	Undisturbed	IVC3
---	---	28.6	23.1	91	---	----	---	----	---	Bottomland flat	1	Poor	Poor	Herbaceous	Cultivated, idle	IIB1
96	135	38.0	30.7	101	---	----	---	----	---	Upland upper slope	6	Good	Poor	Shortleaf and loblolly pine, herbaceous understory	Grazed	IVC3
98+	210+	36.5	35.2	102	---	----	---	----	---	Upland upper slope	15	Good	Poor	Shortleaf and loblolly pine, herbaceous understory	Undisturbed	IVC3
---	---	26.3	23.0	87	---	----	---	----	---	Bottomland flat	4	Poor	Poor	Herbaceous	Grazed	IIB1
94	98+	24.4	16.6	87	8	26.3	86	0.44	38	Terrace flat	1	Poor	Poor	Shortleaf pine, herbaceous understory	Grazed	IIC1
98	96+	29.4	22.8	91	---	----	---	----	---	Terrace flat	1	Poor	Medium	Herbaceous	Grazed	IIC1
97	177	30.5	22.4	94	---	----	---	----	---	Terrace flat	0	Poor	Poor	Herbaceous	Grazed	IIC1
99	215	17.7	12.8	92	13	19.5	139	1.55	215	Terrace flat	0	Poor	Poor	Loblolly pine, herbaceous understory	Undisturbed	IIC1
96+	255+	29.6	28.8	96	---	----	---	----	---	Upland upper slope	6	Good	Medium	Herbaceous	Grazed	IVA6
96	162	40.7	40.2	99	---	----	---	----	---	Bottomland flat	1	Poor	Poor	Herbaceous	Grazed	IIB1
93+	247+	31.2	30.7	99	---	32.2	240	1.03	247	Upland upper slope	4	Good	Poor	Herbaceous	Grazed	IVA6
90+	197+	34.8+	34.3	98+	---	----	---	----	---	Upland flat	3	Good	Medium	Herbaceous	Grazed	IVA6
98	193	29.5	29.0	97	---	29.7	166	1.00	166	Upland flat	0	Poor	Poor	Hardwood forest	Undisturbed	IVC3
---	---	23.4	15.4	89	---	----	---	----	---	Terrace flat	0	Poor	Poor-med	Herbaceous	Grazed	IIC1
98	189	28.5	27.6	97	---	29.0	146	0.97	142	Terrace flat	1	Poor	Poor	Mixed, pine & hardwood	Undisturbed	IIC1
98	152	21.1	17.4	88	---	20.9	89	1.26	107	Upland flat	0	Good-med	Good	Loblolly pine, herbaceous understory	Undisturbed	IIC1
96+	26+	25.6+	24.3	89+	1	30.2	46	0.56	26	Bottomland flat	0	Poor	Poor	Hardwood forest	Undisturbed	IIB1
9	208	21.2+	20.0	91+	---	----	---	----	---	Upland upper slope	10	Good	Poor	20-yr loblolly pine	Undisturbed	IVC3

(Continued)

Table B4

Table B4 (Continued)

Site No.	Location State	Location County or Parish	USDA Soil Map Identification Soil Series	0- to 6-in. USDA Type	Topography Class	Soil Data, 6- to 12-in. Layer: USDA Texture by Wt, % Type	Sand	Silt	Clay	% Fines	USCS Atterberg Limits LL	PL	PI	Type	Organic Cont. %	Dry Density lb/cu ft	Wet-Season Condition Average MC, %	CI	RI	RCI	MC, % at Atmos Tension 1/3	0.06	% Sat. at 0 Atmos Tension	High-Moisture Condit At Lowest RCI Depth to Water Table, in.	MC %	CI	R
																								Northeast Region			
1	Pa.	Luzerne	Tioga	SiL	Low	SiL	33	52	15	81	27	22	5	CL-ML	0.78	99.9	23.7*	183*	0.85*	155*	25.2	21.8	---	---	---	---	---
2		Luzerne	Tioga	SL	High	SL	62	35	3	55	26	--	NP	ML	1.55	71.2	27.9*	131*	1.38*	161*	44.2	33.7	---	---	---	---	---
3		Luzerne	Lackawanna	SiL	High	SiL	28	59	13	85	26	22	4	ML	1.77	94.3	25.7	192	0.47	90	28.5	25.3	---	---	---	---	---
4		Luzerne	Canfield	C	High	C	16	41	43	90	32	23	9	ML	1.88	91.1	----	---	----	---	30.9	25.6	---	---	---	---	---
5		Luzerne	Papakating	Pt	Low	Pt	35	56	9	70	--	--	NP	Pt	21.85	33.1*	108.9*#	68*	0.49*	43*	141.8	133.3	---	4	108.9*	88	0.1
6		Luzerne	Woostern	SiL	High	SiL	20	67	13	90	32	24	8	ML	2.23	77.4	----	---	----	---	43.4	30.2	---	---	---	---	---
7		Wyoming	Tioga	SL	High	SL	76	17	7	33	19	--	NP	SM	1.15	88.6	----	---	----	---	34.3	22.4	---	---	---	---	---
8		Wyoming	Holly	L	Low	SL	57	33	10	51	25	23	2	ML	1.45	96.1	----	---	----	---	27.9	24.3	---	---	---	---	---
9		Wyoming	Tioga	SL	Low	SL	75	20	5	36	20	--	NP	SM	0.86	91.1	----	---	----	---	29.6	16.8	---	---	---	---	---
10		Centre	Huntington	L	Low	L	38	47	15	68	31	22	9	ML	2.47	93.0	25.5*	195*	0.80*	156*	30.9	25.2	---	---	---	---	---
11		Centre	Hagerstown	SiL	High	SiL	25	54	21	82	26	18	8	CL	0.86	101.1	----	---	----	---	24.9	21.0	---	---	---	---	---
12		Centre	Hublersburg	SL	High	SL	71	12	17	31	17	13	4	SM	0.55	105.5	16.0*	153*	1.16*	177*	21.7	15.9	---	---	---	---	---
13		Centre	Hublersburg	SL	High	SL	74	17	9	30	14	--	NP	SM	0.95	105.5	13.5*	112*	1.52*	170*	21.9	12.7	---	---	---	---	---
14		Centre	Wiltshire	SiL	High	SiL	26	61	13	82	31	23	8	ML	3.27	77.4	----	---	----	---	42.6	32.1	---	---	---	---	---
15		Centre	Wiltshire	SiL	High	SiL	20	58	22	89	33	22	11	CL	1.65	98.6	20.4*	167*	0.80*	134*	27.1	24.2	---	---	---	---	---
16		Huntingdon	Andover	SiL	Low	SiL	22	60	18	83	28	20	8	CL	1.45	93.0	26.0	141	0.96	78	29.4	26.6	---	8	26.9	154	0.1
17		Huntingdon	Lindside	L	Low	L	37	48	15	70	41	26	15	ML	4.91	84.9	----	---	----	---	35.1	30.2	---	---	---	---	---
18		Bedford	Elkins	SiL	Low	SiL	13	63	24	92	45	30	13	ML	4.53	83.7	----	---	----	---	38.8	35.0	---	---	---	---	---
19		Bedford	Elkins	L	Low	SL	58	31	11	49	25	24	1	SM	3.54	78.0	37.5	127	0.30	63	44.6	40.6	---	18	36.2	136	0.2
20		Bedford	Atkins	L	Low	L	34	41	25	74	25	18	7	CL-ML	0.70	104.3	----	---	----	---	24.9	19.2	---	---	---	---	---
21		Blair	Gutnrie	SiL	Low	SiL	11	67	22	93	40	25	15	CL	2.75	92.4	24.9	131	0.69	92	35.8	27.1	---	<48	26.8	102	0.7
22		Blair	Duffield	SiL	High	SiCL	19	49	32	69	41	24	17	CL	1.65	87.4	----	---	----	---	35.2	28.9	---	---	---	---	---
23		Blair	Duffield	SiL	High	SiL	17	59	24	88	33	23	10	CL	1.45	91.8	----	---	----	---	30.7	25.6	---	---	---	---	---
24		Indiana	Pope	LS	High	LS	79	20	1	30	--	--	NP	SM	3.47	69.6	21.9*	129*	1.23*	159*	57.5	35.6	---	---	---	---	---
25		Indiana	Clymer	L	High	L	32	48	20	71	32	21	11	CL	2.08	87.4	23.2	145	0.81	89	27.4	23.9	---	---	---	---	---
26		Indiana	Clymer	SiL	High	SiL	27	52	21	69	34	23	11	CL	2.68	77.4	----	---	----	---	43.4	36.9	---	---	---	---	---
27		Indiana	Gilpin	SiL	High	SiL	20	72	8	78	32	22	10	CL	1.77	92.4	----	---	----	---	31.6	26.8	---	---	---	---	---
28		Indiana	Ernest	L	High	L	32	48	20	77	37	24	13	CL	2.55	89.5	30.8*	181*	0.63*	114*	33.1	29.2	---	---	---	---	---
29		Indiana	Lickdale	L	Low	L	42	43	15	65	35	23	12	CL	4.72	88.6	----	---	----	---	34.7	28.9	---	---	---	---	---
30		Indiana	Ernest	SiL	High	SiL	27	53	20	86	35	24	11	CL	1.48	88.6	26.1*	144*	0.64*	92*	33.6	29.3	---	---	---	---	---
31		Armstrong	Ernest	L	High	L	48	36	16	52	26	19	7	CL-ML	1.25	99.9	25.8	158	0.55	87	28.1	20.8	---	---	---	---	---
32		Armstrong	Atkins	L	High	L	35	43	22	74	34	24	10	ML	2.75	89.5	28.4	168	0.72	122	32.8	28.9	---	---	---	---	---
33		Armstrong	Philo	SiL	High	SiL	29	59	20	53	38	25	13	ML	2.87	86.8	30.9	192	0.61	117	34.0	30.9	---	---	---	---	---
34		Armstrong	Brinkerton	CL	Low	L	47	36	17	64	44	26	18	CL	4.84	88.6*	61.3*#	52*	0.27*	14*	37.6	33.6	---	1	61.3*	52	0.4
35		Armstrong	Philo	L	Low	L	35	47	18	76	37	25	12	ML	4.92	87.4	31.6	202	0.59	125	34.4	30.9	---	12	33.3	156	0.2
36		Crawford	Holly	SiL	Low	SiL	21	61	18	87	40	26	14	ML	4.69	77.4	42.8	90	1.66	60	44.7	37.8	---	4	45.0	74	0.4
37		Crawford	Holly	SiL	Low	SiL	33	55	12	62	30	23	7	ML	2.33	75.5	38.5	94	0.65	63	44.7	40.7	---	<24	38.6	78	0.3
38		Crawford	Holly	SiL	Low	SiL	19	65	16	84	41	24	12	ML	4.05	73.7	43.6	77	0.66	52	48	40.8	---	---	---	---	---
39		Crawford	Braceville	L	High	L	44	42	14	71	21	21	4	CL-ML	2.62	87.4	----	---	----	---	34.0	28.2	---	---	---	---	---
40		Crawford	Tioga	SiL	Low	SiL	34	52	14	69	24	20	4	ML	4.34	74.5	34.7	152	0.75	115	44.4	33.2	---	---	---	---	---
41		Crawford	Tioga	SiL	High	SiL	32	47	21	71	24	20	4	ML	2.47	86.2	32.1	172	0.54	93	34.3	28.2	---	---	---	---	---
42		Crawford	Tioga	SL	High	SiL	42	47	11	57	30	24	6	ML	3.02	76.8	33.2	194	0.65	128	43.4	35.1	---	---	---	---	---
43		Crawford	Frenchtown	SiL	High	SiL	25	50	25	87	43	34	11	ML	5.12	75.2	43.9*	151*	0.72*	94*	46.3	38.7	---	---	---	---	---
44	N. Y.	Cattaraugus	Undilla	SiL	Low	SiL	22	64	14	66	27	22	5	CL-ML	2.39	85.5	27.5	177	0.64	114	37.9	32.9	---	---	---	---	---
45		Cattaraugus	Undilla	SiL	High	SiL	6	72	22	92	27	22	5	ML	2.05	89.2	24.8	157	0.60	124	34.4	31.5	---	---	---	---	---
46		Cattaraugus	Tyler	SL	Low	SiCL	14	53	33	6	43	4	25	OE	4.78	60.6*	134.8*#	66*	0.36*	24*	65.5	59.7	---	---	109.8*	66	0.4
47		Cattaraugus	Chenango	SiL	High	SiL	35	54	11	71	34	27	7	ML	4.15	73.7	----	---	----	---	43.8	35.6	---	---	---	---	---
48		Cattaraugus	Undilla	SiL	High	SiL	32	54	14	68	21	21	5	CL-ML	1.45	87.4	31.4	167	0.70	115	32.7	29.2	---	---	---	---	---
49		Niagara	Lazemont	SiCL	Low	SiL	4	46	44	87	53	27	26	CH	5.41	83.3	32.7	196	0.75	106	33.5*	30.8	---	3	43.5	148	0.3
50		Niagara	Lazemont	SiCL	Low	SiCL	13	44	43	87	38	23	15	CL	2.23	93.1	40.4	134	0.82	64	36.7*	29.0	---	---	40.0	109	0.2
52		Niagara	Schoharie	SiL	Low	SiL	22	48	30	78	48	24	22	CL	2.65	92.4	31.3*	194*	1.76*	74*	38.0	29.1	---	2	31.3	104	0.2
53		Niagara	Dunkirk	L	Low	L	41	42	17	58	24	20	4	CL-ML	2.66	92.4	27.2	111	0.45	51	31.0	25.6	---	5	28.6	94	0.3
54		Niagara	Dunkirk	L	Low	L	43	41	16	63	--	--	NP	ML	2.47	94.9	27.2	71	0.42	29	31.2	27.3	---	5	27.1	60	0.2
55		Niagara	Fulton	L	Low	L	44	41	15	60	27	21	6	CL	3.13	93.0	27.7	162	0.63	102	31.2	26.6	---	0	34.4	139	0.3
56		Niagara	Collamer	SiL	High	SiL	24	54	22	82	28	19	9	CL	3.30	87.4	41.1*	263*	0.59*	73*	37.8	27.7	---	---	---	---	---
57		Niagara	Dunkirk	L	Low	L	41	43	16	77	43	32	11	ML	1.98	94.9	31.1*	128*	1.26*	52*	34.9	25.6	---	---	34.7	120	0.3
58		Niagara	Berrien	SL	High	LS	77	21	2	23	22	--	NP	SM	1.12	94.9	----	---	----	---	26.6	22.4	---	---	---	---	---
59		Genesee	Wild	SL	Low	SiL	14	54	32	86	28	21	7	ML	4.31	72.4	33.1*	149*	0.72*	107*	47.2	42.1	---	---	---	---	---
60		Genesee	Wild	SiL	Low	SiL	5	53	42	95	44	30	14	ML	4.68	87.4	----	---	----	---	53.2	47.8	---	---	---	---	---
62	Pa.	Tioga	Tioga	SiL	Low	SiL	24	58	18	76	34	30	4	ML	3.54	84.9	42.8*	137*	0.56*	72*	36.7*	32.3	---	<48	41.8	137	0.3
63		Tioga	Tioga	SiL	Low	SiL	24	58	18	76	34	26	8	CL	3.77	92.4	----	---	----	---	33.4	28.1	---	---	---	---	---
64		Tioga	Tioga	SiL	Low	SiL	9	57	34	93	37	27	10	ML	4.43	74.5	44.8	48	2.21	244	42.6	34.0	---	---	---	---	---
65		Union	Hartleton	L	Low	SiL	13	57	30	87	34	27	7	ML	4.43	74.5	----	---	----	---	36.1	34.0	---	---	---	---	---
66		Union	Hartleton	L	Low	SiL	13	57	30	87	34	27	7	ML	4.43	74.5	----	---	----	---	36.1	34.0	---	---	---	---	---
67		Union	Melvin	SiL	Low	SiL	20	57	23	93	37	24	13	CL	2.46	87.4	36.2	104	0.63	103	38.0	32.4	---	---	---	---	---
68		Union	Wheeling	SiCL	High	SiCL	4	43	53	96	38	24	14	CL	4.44	91.1	28.8	134	0.62	93	31.4	26.8	---	---	---	---	---
69		Centre	Dunmore	SiL	High	SiL	22	54	24	78	29	21	8	CL	4.47	91.1	----	---	----	---	29.7	26.0	---	---	---	---	---
70		Centre	Arnaty	SiL	High	SiL	22	54	24	78	33	21	12	ML	3.41	90.1	27.3	165	0.76	120	35.3	31.1	---	---	---	---	---
72	N. Y.	Monroe	Valois	SL	Low	SL	41	43	16	59	27	21	6	ML	3.47	94.9	28.6	139	0.64	90	34.5	27.6	---	---	---	---	---
73		Monroe	Berkshire	SiL	Low	SiL	9	57	34	93	43	24	19	CL	4.37	94.9	27.4*	151*	0.81*	123*	28.7	25.4	---	2	27.4	152	0.2
74		Monroe	Unadilla silt l	L	Low	SiL	20	58	22	78	34	23	11	CL-ML	4.41	92.4	----	---	----	---	25.2	20.3	---	---	---	---	---
75		Monroe	Lordstown	SiL	Low	SiL	6	54	40	94	44	23	21	CL	3.43	97.4	28.4*	138*	0.81*	92*	28.2	25.4	---	---	---	---	---
76		Monroe	Wilson	SiL	Low	SiL	24	54	22	76	34	23	11	CL	4.34	92.4	----	---	----	---	28.8	23.7	---	---	---	---	---
78		Monroe	Ramsen	SiL	Low	SiL	21	48	31	79	36	21	15	CL	3.44	94.9	----	---	----	---	21.5	19.0	---	---	---	---	---
77		Monroe	Elsewood	SL	Low	SL	53	34	13	47	--	--	NP	SL	12.44	72.4	37.2*	13*	0.42*	54*	46.6	40.8	---	---	---	---	---
79		Monroe	Unadilla silt l	SiL	Low	SiL	22	53	25	78	--	--	NP	CL	11.46	94.9	----	---	----	---	83.2	76.5	---	---	---	---	---
74		Monroe	Williamsburg	SiL	Low	SiL	11	57	32	89	37	25	12	ML	4.7	94.9	28.3	245	0.98	131	28.1	25.2	---	1	23.2	167	0.2
80		Monroe	Tunkhannock	SiL	Low	SiL	21	52	27	79	43	28	15	MH	5.96	73.7	42.6	126	0.72	65	42.9	37.4	---	6	41.8	91	0.3
101	Mass.	Fairfield	Merrimac	SL	High	SL	42	43	15	58	24	--	NP	ML	1.63	94.9	24.9	128	0.61	80	33.3	27.6	---	---	---	---	---
102		Fairfield	Pumsey	SL	Low	SL	42	33	25	76	27	--	NP	ML	1.29	94.9	32.4	140	0.74	103	41.2	33.1	---	18	32.4	134	0.3
104		New Haven	Cheshire	SiL	High	L	34	44	22	67	23	22	4	ML	2.87	82.4	28.6	164	0.72	117	37.5	29.0	---	---	---	---	---
105		New Haven	Cheshire	SL	High	SL	54	38	8	54	23	20	3	ML	3.30	89.9	----	---	----	---	32.2	26.9	---	---	---	---	---
106		New Haven	Ludlow	SL	Low	SL	53	33	14	61	24	19	6	CM-CL	2.23	93.0	22.8	173	0.58	103	29.1	21.4	---	---	---	---	---
107		New Haven	Ludlow	L	Low	L	36	49	15	65	22	17	5	L-ML	1.98	84.9	25.1	145	0.66	97	36.2	24.5	---	---	---	---	---
108		Hartford	Rimwood	SiL	Low	SiL	17	67	16	89	32	24	8	ML	2.60	86.8	33.2	163	0.69	97	36.5	32.0	---	---	---	---	---
109		Hartford	Chalker	SiL	Low	SiL	34	55	11	62	27	27	0	ML	2.23	98.0	32.0	197	0.58	91	35.4	31.6	---	<10	30.2	198	0.4
110		Hartford	Rimwood	L	Low	L	37	38	25	73	32	21	11	CL	1.05	93.0	25.1	151	0.64	96	31.5	27.8	---	---	---	---	---
111		Hartford	Hadley	SiL	High	SiL	26	67	7	89	23	23	0	ML	2.23	84.9	30.1	200	0.81	162	35.9	31.4	---	---	---	---	---
112		Hartford	Carver	LS	High	LS	84	12	4	22	16	--	NP	SM	0.86	92.4	6.8*	147*	1.42*	20**	31.3	13.2	---	---	---	---	---
113		Hartford	Merrimac	SiL	High	SL	96	40	4	57	22	--	NP	ML	1.05	79.3	20.2	138	1.05	147	38.8	28.0	---	---	---	---	---

(Continued)

* Questionable value, not used in analysis.
\# Single site reading.

Table B4 (Continued)

Condition Age RI	RCI	MC, % at Atmos Tension 0	0.06	% Sat. at 0 Atmos Tension	High-Moisture Condition: At Lowest RCI: Depth to Water Table, in.	MC %	CI	RI	Lowest RCI	Topographic Position	Slope %	Drainage: Surface	Internal	Vegetation	Land Use	Eng. Conf. Land Form
					Northeast Region											
0.85‡	155‡	25.2	21.8	---	---	----	---	----	---	Bottomland flat	0	Medium	Good	Herbaceous	Fallow	IIB1
1.38‡	181‡	44.2	33.7	---	---	----	---	----	---	Bottomland flat	0	Medium	Good	Fire cherry, sycamore, and hickory	Undisturbed	IIB1
0.47	90	28.5	25.3	---	---	----	---	----	---	Terrace slope	5	Good	Good	Sumac with herbaceous understory	Undisturbed	IID
---	---	30.9	25.0	---	---	----	---	----	---	Upland upper slope	3	Good	Good-med	Hardwood forest	Undisturbed	IVA5
0.49‡	43‡	141.8	133.3	---	4	138.9*	88	0.49	43	Bottomland flat	0	Poor	Poor	Herbaceous	Undisturbed	VC3
---	---	43.4	30.2	---	---	----	---	----	---	Upland upper slope	3	Good	Good	Herbaceous	Cultivated, idle	ID1
---	---	34.3	22.4	---	---	----	---	----	---	Terrace slope	10	Good	Good	Hardwood forest	Undisturbed	IIC1
---	---	27.9	24.3	---	---	----	---	----	---	Terrace flat	0	Poor	Poor	Herbaceous	Fallow	IIC1
---	---	29.6	16.8	---	---	----	---	----	---	Terrace flat	0	Medium	Good	River birch and sycamore	Undisturbed	IIB1
0.80‡	156‡	30.9	25.2	---	---	----	---	----	---	Terrace flat	0	Medium	Good	Herbaceous	Grazed	IIB1
---	---	24.9	21.0	---	---	----	---	----	---	Upland flat	0	Medium	Medium	Red oak forest	Undisturbed	IVA1
1.16‡	177‡	21.7	15.9	---	---	----	---	----	---	Upland ridge	0-3	Fair	Good	Herbaceous	Undisturbed	IVA1
1.52‡	170‡	21.9	12.7	---	---	----	---	----	---	Upland ridge	0-3	Good	Good	Aspen saplings	Undisturbed	IVA1
---	---	42.6	32.1	---	---	----	---	----	---	Upland upper slope	10	Good	Good	Red pine forest	Undisturbed	IVA1
0.80‡	134‡	27.1	24.2	---	---	----	---	----	---	Upland upper slope	10	Good	Good	Young planted ash, herbaceous	Undisturbed	IVA1
0.56	78	29.4	26.6	---	3	20.9	154	0.48	74	Upland flat	0	Poor	Poor	Herbaceous with some trees	Undisturbed	IVA2
---	---	35.1	30.2	---	---	----	---	----	---	Bottomland flat	0	Poor	Medium	Herbaceous	Fallow	IIB1
---	---	38.8	35.0	---	---	----	---	----	---	Bottomland depression	0	Poor	Medium	Herbaceous	Grazed	VC3
0.50	63	44.6	40.6	---	15	36.2	136	0.43	58	Bottomland flat	0	Poor	Poor	Herbaceous	Fallow	IIB3
---	---	22.6	17.2	---	---	----	---	----	---	Bottomland flat	0	Poor	Medium	White and shortleaf pine forest	Undisturbed	IIB1
0.69	92	30.5	27.1	---	[illegible]	20.8	102	0.67	68	Terrace flat	5	Medium	Good	Herbaceous	Fallow	VF
---	---	35.2	28.9	---	---	----	---	----	---	Upland upper slope	6	Good	Medium	Pine and spruce	Undisturbed	IVA1
---	---	30.7	25.6	---	---	----	---	----	---	Upland upper slope	6	Good	Medium	Herbaceous	Hay	IVA1
1.23‡	164‡	57.5	55.6	---	---	----	---	----	---	Terrace flat	0	Medium	Good	Beech, red maple, and witch hazel	Undisturbed	IIB2
0.61	89	27.4	23.9	---	---	----	---	----	---	Upland upper slope	6	Poor	Good	Herbaceous	Fallow	IVA5
---	---	43.4	36.3	---	---	----	---	----	---	Upland upper slope	6	Poor	Good	Hardwood forest, thick brush understory	Undisturbed	IVA5
---	---	31.6	26.8	---	---	----	---	----	---	Upland upper slope	10	Medium	Good	Herbaceous	Hay (plowed)	VF
0.63‡	114‡	33.1	24.2	---	---	----	---	----	---	Bottomland flat	0	Poor	Good	Herbaceous	Grazed	IIB1
---	---	34.7	28.4	---	---	----	---	----	---	Upland depression	0	Poor	Medium	Herbaceous	Undisturbed	VF
0.64‡	92‡	33.6	29.3	---	---	----	---	----	---	Upland lower slope	0	Poor	Good	Herbaceous	Fallow	VF
0.55	87	26.2	21.5	---	---	----	---	----	---	Upland lower slope	10	Good	Good	Herbaceous	Fallow	VF
0.72	122	32.8	28.9	---	---	----	---	----	---	Upland lower slope	0	Poor	Good	Herbaceous	Fallow	VF
0.61	117	34.6	30.9	---	---	----	---	----	---	Upland lower slope	0	Poor	Good	Crataegus and black cherry	Undisturbed	VF
0.27‡	144‡	37.6	33.6	---	1	62.5*	92	0.27	24	Bottomland flat	0	Poor	Poor	Herbaceous	Undisturbed	IIB1
0.59	125	34.4	30.9	---	12	33.3	198	0.46	73	Terrace flat	0	Poor	Good	Herbaceous	Hay	IIC1
0.66	60	44.1	39.3	---	4	49.0	74	0.56	47	Terrace slope	5	Poor	Medium	Herbaceous	Undisturbed	IIC1
0.65	63	44.7	40.7	---	[illegible]	38.6	79	0.62	48	Terrace flat	0	Poor	Medium	Herbaceous	Grazed	IIC1
0.66	50	46.3	40.2	---	---	----	---	----	---	Terrace flat	0	Poor	Medium	Elm trees, herbaceous	Grazed	IIC1
---	---	32.0	28.2	---	---	----	---	----	---	Terrace slope	5	Good	Good	Herbaceous	Undisturbed	ID2
0.73	113	41.2	33.2	---	---	----	---	----	---	Terrace flat	0	Poor	Good	Herbaceous	Undisturbed	IIC1
0.54	93	34.5	28.3	---	---	----	---	----	---	Terrace slope	4	Medium	Good	Herbaceous	Undisturbed	IID
0.65	128	43.4	35.2	---	---	----	---	----	---	Terrace slope	4-6	Medium	Good	Crataegus, herbaceous	Undisturbed	IID
0.72‡	94‡	40.5	38.7	---	---	----	---	----	---	Upland lower slope	0	Medium	Medium	Herbaceous	Fallow	ID2
0.64	114	37.4	32.4	---	---	----	---	----	---	Terrace flat	0	Poor	Good	Bracken fern	Undisturbed	IIC1
0.66	124	34.4	31.5	---	---	----	---	----	---	Terrace flat	0	Poor	Good	Aspen saplings	Undisturbed	IIC1
0.36‡	24‡	69.8	64.7	---	---	49.0*	66	0.36	24	Bottomland flat	0	Poor	Poor	Elm and soft maple, fern understory	Undisturbed	IIB3
---	---	43.8	35.5	---	---	----	---	----	---	Upland flat	0	Medium	Good	Herbaceous	Undisturbed	ID1
0.70	113	32.7	29.2	---	---	----	---	----	---	Terrace slope	4-6	Medium	Good	Herbaceous	Undisturbed	IIB1
0.75	100	33.9*	30.4	---	3	43.5	148	0.49	68	Upland flat	0	Poor	Poor	Tree seedlings, herbaceous	Fallow	IC
0.82‡	84‡	32.7*	29.1	---	---	41.4	170	0.52	80	Upland flat	0	Poor	Poor	Herbaceous	Fallow	IC
0.76‡	74‡	32.4	29.1	---	4	34.3	144	0.49	70	Upland flat	0	Poor	Good	Herbaceous	Fallow	IIB
0.45	51	36.1	27.8	---	[illegible]	28.7	44	0.41	31	Upland flat	0	Medium	Poor	Herbaceous	Undisturbed	IC
0.42	29	31.2	27.3	---	[illegible]	24.4	42	0.41	27	Upland flat	0	Poor	Poor	Herbaceous	Undisturbed	IC
0.63	122	35.2	28.8	---	[illegible]	34.4	83	0.54	52	Upland flat	0	Poor	Poor	Herbaceous	Undisturbed	IC
0.59‡	73‡	37.5	27.7	---	---	----	---	----	---	Upland lower slope	2-4	Good	Medium	Herbaceous	Grazed	IC
0.26‡	32‡	36.4	28.4	---	---	31.4	142	0.48	34	Upland flat	2-4	Good	Good	Herbaceous	Grazed	IC
---	---	26.8	22.4	---	---	----	---	----	---	Upland flat	3	Medium	Good	Herbaceous	Undisturbed	IIIB
0.72‡	107‡	47.4	44.4	---	---	----	---	----	---	Upland flat	4-6	Medium	Medium	Herbaceous	Undisturbed	ID2
---	---	53.2	47.8	---	---	----	---	----	---	Upland flat	4-6	Medium	Medium	Herbaceous	Hay	ID2
0.58‡	74‡	36.7*	32.3	---	[illegible]	44.8	163	0.48	74	Bottomland flat	0	Poor	Poor-med	Elm, brush understory	Undisturbed	ID2
1.02	146	41.8	27.4	---	---	----	---	----	---	Terrace flat	0	Poor	Good	Herbaceous with some trees	Undisturbed	IIC1
---	---	33.4	27.1	---	---	----	---	----	---	Terrace flat	0	Poor	Good	Herbaceous	Fallow	IIC1
2.21	244	41.8	34.0	---	---	----	---	----	---	Terrace flat	0	Medium	Good	Hard ash and cherry trees	Undisturbed	IIC1
---	---	50.1	34.1	---	---	----	---	----	---	Terrace flat	0	Good	Good	Herbaceous	Undisturbed	IIB1
1.32‡	238‡	44.7	28.8	---	---	----	---	----	---	Terrace flat	0	Good	Good	Elm or maple, herbaceous understory	Undisturbed	IIB1
0.63	143	38.1	32.4	---	---	----	---	----	---	Terrace flat	0	Good	Good	Herbaceous	Fallow	IIC1
0.82	95	31.4	26.8	---	---	----	---	----	---	Terrace slope	5	Medium	Medium	Herbaceous	Fallow	IIC1
---	---	27.1	24.1	---	---	----	---	----	---	Upland upper slope	4	Good	Medium	Herbaceous	Undisturbed	IVA1
0.76	120	35.5	31.1	---	---	----	---	----	---	Terrace flat	4	Medium	Medium	Herbaceous	Hay	IVA1
0.64	96	34.9	27.7	---	---	----	---	----	---	Upland upper slope	4	Good	Good	Herbaceous with some pine trees	Undisturbed	ID2
0.81‡	123‡	28.7	23.4	---	2	27.4	142	0.47	63	Upland flat	0	Good	Good	Herbaceous	Undisturbed	ID2
---	---	25.2	21.3	---	---	----	---	----	---	Terrace flat	4	Medium	Good	Herbaceous and forest	Idle	ID2
0.61‡	92‡	28.1	24.9	---	---	----	---	----	---	Upland flat	0	Medium	Medium	Herbaceous	Fallow	ID2
---	---	28.5	25.7	---	---	----	---	----	---	Upland flat	0	Medium	Medium	Herbaceous	Undisturbed	ID2
---	---	21.3	17.6	---	---	----	---	----	---	Upland flat	0	Medium	Medium	Herbaceous	Undisturbed	ID2
0.42‡	51‡	46.6	41.5	---	---	----	---	----	---	Terrace flat	0	Medium	Good	Herbaceous	Undisturbed	IC
---	---	65.1	70.1	---	---	----	---	----	---	Bottomland flat	0	Poor	Poor	Herbaceous	Undisturbed	VC3
0.68	134	28.2	25.4	---	[illegible]	24.2	167	0.58	82	Bottomland flat	0	Medium	Medium	Herbaceous	Undisturbed	IIC1
0.72	81	42.9	37.4	---	[illegible]	44.8	91	0.71	54	Upland flat	0	Medium	Medium	Elm and ash, herbaceous	Undisturbed	IIC1
0.61	80	31.2	27.5	---	---	----	---	----	---	Terrace slope	5	Good	Good	Herbaceous	Fallow	IIC1
0.74	143	41.2	33.1	---	10	32.4	134	0.71	91	Bottomland flat	0	Poor	Good	Herbaceous	Undisturbed	VC3
0.72	117	37.6	29.4	---	---	----	---	----	---	Upland lower slope	2	Medium	Good	Young ash, herbaceous understory	Undisturbed	ID2
---	---	32.2	28.7	---	---	----	---	----	---	Upland upper slope	5	Medium	Good	Herbaceous	Hay	ID2
0.98	103	29.1	21.4	---	---	----	---	----	---	Bottomland flat	0	Poor	Good	Herbaceous	Undisturbed	IIB1
0.66	97	36.2	24.5	---	---	----	---	----	---	Bottomland flat	0	Poor	Good	Sassafras	Undisturbed	IIB1
0.59	97	36.5	32.0	---	---	----	---	----	---	Terrace flat	0	Poor	Poor	Herbaceous	Fallow	IIC1
0.58	91	35.4	31.6	---	[illegible]	30.2	138	0.56	88	Bottomland flat	3	Good	Medium	Herbaceous	Hay	ID2
0.64	96	31.5	27.8	---	---	----	---	----	---	Terrace slope	3	Good	Medium	Herbaceous	Fallow	IIC2
0.81	162	35.7	34.4	---	---	----	---	----	---	Bottomland flat	0	Poor	Good	Herbaceous	Hay	IIB1
1.42‡	284‡	31.3	15.2	---	---	----	---	----	---	Terrace flat	0	Medium	Good	Mixed, pine & hardwood	Undisturbed	IIC1
1.05	147	35.5	28.7	---	---	----	---	----	---	Terrace flat	0	Medium	Good	Mixed, pine & hardwood	Undisturbed	IIC1

(Continued)

Table B4 (Continued)

Site No.	Location: State	Location: County or Parish	USDA Soil Map Identification: Soil Series	0- to 6-in. USDA Type	Topography Class	Soil Data, 6- to 12-in. Layer: USDA Texture by Wt, %: Type	Sand	Silt	Clay	USCS: % Fines	Atterberg Limits: LL	PL	PI	Type	Organic Cont. %	Dry Density lb/cu ft	Wet-Season Condition Average: MC, %	CI	RI	RCI	MC, % at Atmos Tension: 0	0.06	% Sat. at 0 Atmos Tension	High-Moisture Condition At Lowest RCI: Depth to Water Table, in.	MC %	CI	RI
Northeast Region (Continued)																											
114	Conn.	Hartford	Merrimac	LS	High	LS	78	18	4	30	16	--	NP	SM	1.45	97.4	16.0‡	181‡	1.08‡	195‡	26.7	19.1	---	---	----	---	----
115		Hartford	Merrimac	SL	High	SL	70	25	5	41	18	--	NP	SM	1.05	103.0	18.0‡	171‡	1.74‡	298‡	24.0	18.0	---	---	----	---	----
116		Tolland	Enfield	SIL	High	SIL	30	64	6	85	31	--	NP	ML	2.23	69.9	30.5	155	0.92	143	51.4	37.9	---	---	----	---	----
117		Tolland	Enfield	SL	High	SIL	45	50	5	72	24	--	NP	ML	1.98	88.0	----	---	----	---	34.8	27.1	---	---	----	---	----
118		Tolland	Gloucester	SL	High	SL	69	27	4	45	20	--	NP	SM	1.45	98.0	----	---	----	---	27.1	19.1	---	---	----	---	----
119	Mass.	Hampden	Merrimac	SL	High	SL	64	32	4	47	23	17	6	SM-SC	2.75	96.1	----	---	----	---	26.5	20.2	---	---	----	---	----
120		Hampden	Walpole	SL	Low	SL	60	32	8	52	25	25	0	ML	3.69	85.5	33.0‡	140‡	0.49‡	69‡	36.9	29.2	---	---	----	---	----
121		Hampden	Agawam	LS	High	LS	80	16	4	35	18	--	NP	SM	1.45	96.8	14.0‡	179‡	1.64‡	294‡	27.9	22.6	---	---	----	---	----
122		Hampden	Merrimac	LS	High	LS	81	15	4	25	21	--	NP	SM	2.23	94.3	14.3‡	151‡	2.04‡	300+‡	30.3	16.4	---	---	----	---	----
123		Hampshire	Ondawa	S	High	S	37	11	2	21	24	--	NP	SM	2.23	88.0	----	---	----	---	35.5	18.4	---	---	----	---	----
124		Hampshire	Ramney	SL	High	SL	69	26	5	40	26	--	NP	SM	1.33	78.0	----	---	----	---	41.0	34.6	---	---	----	---	----
125		Hampshire	Woodbridge	SL	Low	SL	67	28	5	47	22	--	NP	SM	1.65	98.0	36.9	176	0.61	107	28.7*	23.3	---	---	36.1	166	0.6
126		Hampshire	Woodbridge	SIL	Low	SL	48	47	5	65	32	--	NP	ML	3.27	81.8	----	---	----	---	43.5	36.9	---	---	----	---	----
127		Hampshire	Woodbridge	SL	Low	SL	52	44	4	60	--	--	NP	ML	3.39	79.9	----	---	----	---	43.3	33.9	---	---	----	---	----
128		Hampshire	Buxton	SL	Low	L	50	28	22	56	26	19	7	CL-ML	1.25	95.5	32.8‡	107‡	0.68‡	73‡	29.0*	24.3	---	9	32.8	107	0.6
129		Hampshire	Suffield	SIL	High	SIL	22	64	14	85	24	23	6	ML	3.77	83.7	33.8	166	0.54	89	37.3	32.2	---	---	----	---	----
130		Hampshire	Melrose	SL	High	SL	50	44	6	62	23	23	0	ML	2.23	72.4	35.5	137	0.71	97	49.7	37.9	---	---	----	---	----
131		Franklin	Merrimac	LS	High	LS	85	12	3	22	17	--	NP	SM	2.60	90.5	18.5	180	1.95	285	29.9	13.9	---	---	----	---	----
132		Franklin	Merrimac	LS	High	S	57	10	3	21	18	--	NP	SM	1.98	87.4	15.4‡	211‡	1.64‡	300+‡	32.7	22.1	---	---	----	---	----
133		Franklin	Merrimac	S	High	S	96	2	2	7	22	--	NP	SP-SM	2.87	89.3	9.2‡	147‡	2.11‡	300+‡	32.9	10.6	---	---	----	---	----
134		Franklin	Scarboro	SIL	Low	SL	70	25	5	47	26	--	NP	SM	4.70	84.3*	41.4‡	178	0.39	71	39.0	35.7	---	<18	48.4*	171	0.3
135		Franklin	Merrimac	LS	High	S	87	10	3	23	17	--	NP	SM	1.88	96.5	----	---	----	---	37.0	17.7	---	---	----	---	----
136		Franklin	Merrimac	S	High	S	96	3	1	20	24	--	NP	SM	1.98	84.3	22.2‡	138‡	1.52‡	213‡	38.1	16.5	---	---	----	---	----
137	N. H.	Hillsboro	Walpole	SL	Low	SL	61	35	4	42	--	--	NP	SM	4.86	104.3*	50.2*‡	184‡	0.44‡	81‡	24.2	19.0	---	<7	60.2*	184	0.4
138		Hillsboro	Merrimac	SL	High	SL	66	30	4	47	28	--	NP	SM	3.77	71.8	----	---	----	---	54.4	38.0	---	---	----	---	----
139		Hillsboro	Ramney	LS	Low	S	88	9	3	14	--	--	NP	SM	1.98	106.1	----	---	----	---	22.8	14.7	---	---	----	---	----
140		Sullivan	Acton	SL	High	SL	64	36	4	63	24	--	NP	ML	3.62	68.0	----	---	----	---	54.8	47.0	---	---	----	---	----
141		Sullivan	Sudbury	SL	Low	SL	55	41	4	62	32	--	NP	ML	3.96	84.3	36.2‡	146‡	0.58‡	85‡	64.7	58.3	---	6	56.2	146	0.5
142		Sullivan	Colton	SL	High	SL	62	34	4	45	--	--	NP	GM	3.40	73.7	----	---	----	---	43.1	30.6	---	---	----	---	----
143		Sullivan	Leicester	SIL	Low	SIL	34	62	4	71	--	--	NP	ML	4.41	71.8	51.0‡	140‡	0.46‡	64‡	31.9	27.1	---	---	31.0	140	0.4
144		Sullivan	Agawam	SIL	High	SL	10	81	9	42	--	--	NP	ML	3.13	77.4	----	---	----	---	43.2	38.4	---	---	----	---	----
145		Sullivan	Winooski	SL	Low	SIL	4	90	6	81	31	31	0	ML	2.49	74.9	----	---	----	---	43.8	38.0	---	---	----	---	----
146	Vt.	Windsor	Buxton	SIL	Low	SIL	11	73	16	42	27	21	6	CL-ML	3.89	96.8	36.4‡	157‡	0.43‡	68‡	36.0	32.5	---	---	36.4	157	0.4
147		Windsor	Buxton	L	Low	SIL	6	70	25	47	28	20	8	ML	3.75	89.5	----	---	----	---	33.8	28.6	---	---	----	---	----
148		Windsor	Salbury	SL	Low	SIL	43	51	6	48	26	24	2	ML	3.42	84.5*	40.2*	174	0.49	86	37.0	31.0	---	---	----	---	----
149		Windsor	Scarboro	SL	Low	SL	48	47	5	52	--	--	NP	ML	3.18	78.7	----	---	----	---	69.6	62.6	---	---	----	---	----
150		Windsor	Ondawa	SL	Low	SL	54	40	6	44	--	--	NP	SM	2.21	94.3	----	---	----	---	82.2	73.2	---	---	----	---	----
151	N. Y.	Saratoga	Hudson	SIL	Low	SIL	7	72	22	46	38	--	NP	ML	2.47	87.4	32.4	155	0.39	61	35.4	32.2	---	---	----	---	----
152		Saratoga	Rhinebeck	SIL	Low	SIL	13	59	28	41	31	21	10	CL	4.83	91.4	28.5	149	0.65	127	34.2	29.6	---	3	28.6	201	0.5
153		Saratoga	Teawee	L	High	L	41	42	17	60	27	19	8	CL	3.42	90.8	21.1	117	0.68	148	28.4	21.1	---	---	----	---	----
154		Rensselaer	Colonie	SL	High	SL	71	23	6	44	19	14	5	ML	3.13	85.5	21.2	155	0.51	81	31.5	24.3	---	---	----	---	----
155		Rensselaer	Scriba	L	High	SL	57	34	9	44	21	--	NP	ML	3.79	85.2	18.8	177	1.71	300+	29.1	23.0	---	---	----	---	----
156		Rensselaer	Atherton	SIL	Low	L	40	34	26	63	22	20	4	ML	2.45	94.8	44.0*‡	129‡	0.46‡	59‡	30.7	25.0	---	---	40.0*	129	0.4
158		Schenectady	Alden	L	High	SL	53	33	14	46	23	17	6	CL-ML	3.64	96.5	22.7	167	0.47	82	32.3	21.6	---	---	----	---	----
Lake States Region																											
1	Wis.	Marathon	Rozetta	SIL	High	SIL	5	72	23	44	24	18	6	CL-ML	2.70	91.4	24.0	270	0.66	178	34.2	28.0	101	---	----	---	----
2		Marathon	Plainfield	LS	High	S	94	5	1	13	17	--	NP	SM	1.28	97.4	20.1	177	1.58	268	21.1	11.6	80	---	----	---	----
3		Portage	Whitewood	LS	High	S	88	9	3	21	20	--	NP	SM	1.89	93.7	8.7‡	151‡	2.40‡	300+‡	33.4	13.5	91	---	----	---	----
4		Portage	Plainfield	L	High	SL	5	87	8	44	24	17	7	CL	2.23	97.4	----	---	----	---	22.7	15.0	86	---	----	---	----
5		Portage	Plainfield	LS	High	S	94	5	1	13	17	--	NP	SM	1.98	98.4	14.4	148	1.77	122	25.5	17.9	86	---	----	---	----
6		Waushara	Whitewood	LS	High	S	87	9	4	21	--	--	NP	SM	1.28	92.4	14.2	148	1.77	122	25.5	17.9	86	---	----	---	----
7		Waushara	[illegible]	LS	High	LS	91	6	3	21	21	--	NP	SM	1.28	91.8	14.1	152	1.54	232	23.1	12.0	86	---	----	---	----
8		Waushara	[illegible]	LS	High	LS	93	5	2	15	--	--	NP	SM	1.28	91.8	9.1	144	1.47	234	27.0	10.0	89	---	----	---	----
9		Waushara	Whitewood	LS	High	S	90	7	3	21	--	--	NP	SM	1.28	92.4	9.2‡	146‡	1.44‡	279‡	22.3	12.7	86	---	----	---	----
10		[illegible]	Miami	SIL	High	SIL	11	73	16	42	27	21	6	CL-ML	3.89	96.8	36.4‡	157‡	0.43‡	68‡	36.0	32.5	77	---	----	---	----
11		[illegible]	Miami	SIL	High	SIL	13	71	16	43	27	21	6	CL-ML	3.89	96.8	22.1	165	0.73	146	34.0	29.7	96	---	----	---	----
12		[illegible]	Miami	SIL	High	SIL	13	71	16	43	27	21	6	CL-ML	3.89	96.8	21.4	168	0.71	91	36.9	32.6	96	---	----	---	----
13		[illegible]	Marshfield	L	High	SL	7	73	20	47	27	21	6	CL-ML	3.89	96.8	20.7	183	0.64	87	27.9	22.3	87	---	----	---	----
14		[illegible]	Marshfield	L	High	SL	7	73	20	47	27	21	6	CL-ML	3.89	96.8	20.7	183	0.64	87	27.9	22.3	87	---	----	---	----
15		Dane	Dakota	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	34.1	152	0.78	122	51.0	38.1	93	---	----	---	----
16		Dane	Dakota	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	27.4	182	0.73	141	37.5	25.6	100	---	----	---	----
17		Dane	Plano	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	24.4	191	0.64	98	47.2	40.3	114	---	----	---	----
18	Ill.	Whiteside	Fulton	SIL	High	SIL	5	74	21	46	27	21	6	ML	3.89	94.1	31.2‡	249‡	0.42‡	300+‡	23.2	10.4	84	---	----	---	----
19		Whiteside	Fulton	SIL	High	SIL	5	74	21	46	27	21	6	ML	3.89	94.1	31.2	147	0.42	161	42.4	34.7	113	---	----	---	----
20		Whiteside	Fulton	SIL	High	SIL	5	74	21	46	27	21	6	ML	3.89	94.1	31.2	147	0.42	115	42.3	34.6	91	---	----	---	----
21		Whiteside	Fulton	SIL	High	SIL	5	74	21	46	27	21	6	CL-ML	3.89	94.1	24.4‡	174‡	0.42‡	122‡	24.8	24.0	82	---	----	---	----
22		Whiteside	Miami	SIL	High	SIL	11	73	16	42	27	21	6	CL-ML	3.89	96.8	36.4‡	157‡	0.43‡	68‡	36.0	32.5	77	---	----	---	----
23		[illegible]	Miami	SIL	High	SIL	11	73	16	42	27	21	6	CL-ML	3.89	96.8	36.4‡	157‡	0.43‡	68‡	36.0	32.5	77	---	----	---	----
24		[illegible]	Miami	SIL	High	SIL	11	73	16	42	27	21	6	CL-ML	3.89	96.8	36.4‡	157‡	0.43‡	68‡	36.0	32.5	77	---	----	---	----
25		[illegible]	Plano	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	34.0	163	0.58	130	42.5	37.5	92	---	----	---	----
26		[illegible]	Plano	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	33.4	161	0.58	88	41.4	35.4	91	---	----	---	----
27		Ogemaw	Tawas	SIL	High	SIL	14	71	15	42	27	21	6	CL-ML	3.89	94.1	24.4‡	174‡	0.42‡	133‡	22.5	17.3	87	---	----	---	----
28		Ogemaw	Tawas	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	34.3	161	0.74	4	40.7	27.9	92	---	----	---	----
29		Ogemaw	Deerton	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	42.1	170	0.73	43	37.4	26.1	89	---	----	---	----
30		Ogemaw	Tawas	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	34.3	161	0.74	4	40.7	27.9	92	---	----	---	----
31		Ogemaw	Tawas	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	34.3	161	0.74	4	40.7	27.9	92	---	----	---	----
32		Ogemaw	Tawas	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	34.3	161	0.74	4	40.7	27.9	92	---	----	---	----
33		Ogemaw	Tawas	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	34.3	161	0.74	4	40.7	27.9	92	---	----	---	----
34		Ogemaw	Tawas	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	34.3	161	0.74	4	40.7	27.9	92	---	----	---	----
35		Ogemaw	Tawas	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	34.3	161	0.74	4	40.7	27.9	92	---	----	---	----
36		Ogemaw	Rifle	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	34.3	161	0.74	4	40.7	27.9	92	---	----	---	----
37		Ogemaw	Tawas	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	34.3	161	0.74	4	40.7	27.9	92	---	----	---	----
38		Ogemaw	Rifle	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	34.3	161	0.74	4	40.7	27.9	92	---	----	---	----
39		Iosco	Tawas	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	34.3	161	0.74	4	40.7	27.9	92	---	----	---	----
40		Iosco	Tawas	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	34.3	161	0.74	4	40.7	27.9	92	---	----	---	----
41		Iosco	Tawas	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	34.3	161	0.74	4	40.7	27.9	92	---	----	---	----
42		Iosco	Tawas	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	34.3	161	0.74	4	40.7	27.9	92	---	----	---	----
43		Iosco	Rifle	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	34.3	161	0.74	4	40.7	27.9	92	---	----	---	----
44		Iosco	Tawas	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	34.3	161	0.74	4	40.7	27.9	92	---	----	---	----
45		Iosco	Rifle	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	34.3	161	0.74	4	40.7	27.9	92	---	----	---	----
46		Iosco	Tawas	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	34.3	161	0.74	4	40.7	27.9	92	---	----	---	----
47		Iosco	Rifle	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	34.3	161	0.74	4	40.7	27.9	92	---	----	---	----
48		Iosco	Tawas	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	34.3	161	0.74	4	40.7	27.9	92	---	----	---	----
49		Iosco	Rifle	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	34.3	161	0.74	4	40.7	27.9	92	---	----	---	----
50		Iosco	Tawas	SIL	High	SIL	14	71	15	42	27	21	6	ML	3.89	94.1	34.3	161	0.74	4	40.7	27.9	92	---	----	---	----

(Continued)

* Wet-soil moisture tension, bar level at which sample.
† Liquid limit modified.

Table B4 (Continued)

Condition Age RI	RCI	MC, % at Atmos Tension 0	0.06	% Sat. at 0 Atmos Tension	High-Moisture Condition At Lowest RCI: Depth to Water Table, in.	MC %	CI	RI	Lowest RCI	Topographic Position	Slope %	Drainage: Surface	Internal	Vegetation	Land Use	Eng. Conf. Land Form
Northeast Region (Continued)																
1.08‡	195‡	26.7	19.1	---	---	-----	---	----	---	Terrace flat	0	Good	Good	Herbaceous	Undisturbed	IIC1
1.74‡	298‡	24.0	18.0	---	---	-----	---	----	---	Terrace flat	0	Good	Good	Hardwood forest	Undisturbed	IIC1
0.92	143	51.4	37.9	---	---	-----	---	----	---	Upland upper slope	3	Good	Good	Hardwood forest	Undisturbed	IIC1
----	---	34.8	27.1	---	---	-----	---	----	---	Upland upper slope	3	Good	Good	Herbaceous	Hay	IIC1
----	---	27.1	19.1	---	---	-----	---	----	---	Upland upper slope	3	Good	Good	White pine	Undisturbed	ID2
----	---	28.5	20.2	---	---	-----	---	----	---	Upland upper slope	2	Good	Good	Herbaceous	Undisturbed	ID2
0.49‡	69‡	36.9	29.2	---	---	-----	---	----	---	Terrace flat	0	Good	Good	Herbaceous	Hay	ID1
1.64‡	294‡	27.9	22.6	---	---	-----	---	----	---	Terrace flat	0	Poor	Good	Herbaceous	Undisturbed	ID2
2.04‡	300+‡	30.3	16.4	---	---	-----	---	----	---	Terrace flat	0	Poor	Good	Mixed, pine & hardwood	Undisturbed	IIC1
----	---	35.5	18.4	---	---	-----	---	----	---	Terrace flat	0	Poor	Good	Herbaceous	Undisturbed	IIC1
----	---	41.0	34.6	---	---	-----	---	----	---	Terrace flat	0	Poor	Good	Herbaceous	Undisturbed	IIC1
0.61	107	28.7*	23.3	---	---	36.1	166	0.60	100	Upland lower slope	5	Good	Good	Herbaceous	Undisturbed	ID2
----	---	43.5	36.9	---	---	-----	---	----	---	Upland flat	0	Poor	Medium	Herbaceous	Cultivated, idle	ID2
----	---	43.3	33.9	---	---	-----	---	----	---	Upland flat	3	Medium	Good	Herbaceous	Undisturbed	ID2
0.68‡	73‡	29.0*	24.3	---	9	32.8	107	0.68	73	Bottomland flat	0	Good	Medium	Herbaceous	Fallow	IIC1
0.54	89	37.3	32.2	---	---	-----	---	----	---	Bottomland flat	0	Medium	Good	Herbaceous	Undisturbed	IIC1
0.71	97	49.7	37.9	---	---	-----	---	----	---	Bottomland flat	0	Medium	Good	Herbaceous	Undisturbed	IIC1
1.95	285	29.9	13.9	---	---	-----	---	----	---	Terrace flat	0	Medium	Good	Sassafras	Undisturbed	IIC1
1.64‡	300+‡	32.7	22.1	---	---	-----	---	----	---	Upland lower slope	3	Good	Good	Herbaceous with some trees	Undisturbed	IIC1
2.11‡	300+‡	32.9	10.6	---	---	-----	---	----	---	Upland upper slope	5	Good	Good	Herbaceous	Undisturbed	ID2
0.39	71	39.0	35.7	---	>28	48.4*	171	0.31	53	Terrace flat	0	Poor	Good	Herbaceous	Undisturbed	IIC1
----	---	37.0	17.7	---	---	-----	---	----	---	Terrace flat	0	Medium	Good	Pine forest	Undisturbed	IIC1
1.52‡	210‡	38.1	16.5	---	---	-----	---	----	---	Terrace flat	0	Medium	Good	Cherry and oak	Undisturbed	IIC1
0.44‡	81‡	24.2	17.0	---	>7	65.2*	184	0.44	81	Terrace flat	0	Poor	Good	Herbaceous	Hay	ID1
----	---	54.4	38.0	---	---	-----	---	----	---	Terrace slope	3	Good	Good	Herbaceous	Grazed	ID1
----	---	22.8	14.7	---	---	-----	---	----	---	Bottomland flat	2	Medium	Poor	Herbaceous	Hay	IIB1
----	---	54.8	47.0	---	---	-----	---	----	---	Upland lower slope	3	Medium	Good	Herbaceous	Undisturbed	ID2
0.58‡	85‡	64.7	58.3	---	6	56.2	146	0.58	99	Upland flat	0	Poor	Good	Herbaceous	Undisturbed	ID5
----	---	43.1	36.6	---	---	-----	---	----	---	Terrace flat	0	Poor	Good	Herbaceous	Undisturbed	IIC1
0.46‡	64‡	31.9	27.1	---	>16	14.0	146	0.46	96	Upland flat	0	Poor	Poor	Hardwood forest	Undisturbed	VF
----	---	43.2	38.4	---	---	-----	---	----	---	Terrace flat	0	Poor	Good	Herbaceous	Playground	IIC1
----	---	43.8	38.0	---	---	-----	---	----	---	Bottomland flat	0	Poor	Good	Herbaceous	Undisturbed	IIC1
0.43‡	68‡	36.0	32.5	---	36.4	237	1.43	68		Upland lower slope	20	Good	Med-good	Herbaceous	Undisturbed	ID5
----	---	33.8	28.6	---	---	-----	---	----	---	Upland flat	0	Poor	Medium	Pine, birch, and poplar	Undisturbed	ID5
0.49	86	37.2	31.0	---	---	-----	---	----	---	Upland flat	0	Poor	Good	Herbaceous	Undisturbed	VF
----	---	69.0	62.6	---	---	-----	---	----	---	Upland flat	0	Poor	Poor	Young maple	Undisturbed	VF
----	---	82.2	73.2	---	---	-----	---	----	---	Upland lower slope	5	Good	Medium	Herbaceous	Hay	IID
0.39	61	35.4	32.2	---	---	-----	---	----	---	Upland flat	0	Poor	Good	Herbaceous	Undisturbed	IC
0.65	127	34.2	27.0	---	5	25.9	201	0.65	114	Upland flat	0	Poor	Medium	Post oak, herbaceous understory	Grazed	IC
0.68	148	28.4	21.1	---	---	-----	---	----	---	Terrace slope	3	Good	Good	Small ash, brush, and herbaceous understory	Undisturbed	IIC1
0.51	81	31.9	24.3	---	---	-----	---	----	---	Terrace slope	3	Good	Good	Herbaceous	Undisturbed	IIC1
1.71	300+	29.1	23.4	---	---	-----	---	----	---	Terrace flat	0	Medium	Poor	Young elm	Undisturbed	IIC1
0.46‡	59‡	30.7	25.0	---	4	41.4*	124	0.46	59	Terrace flat	0	Poor	Poor	Elm and gray birch, brush understory	Undisturbed	IC
0.47	82	32.3	21.6	---	---	-----	---	----	---	Upland flat	0	Medium	Medium	Hardwood forest	Undisturbed	ID2
Lake States Region																
0.66	178	34.2	28.1	121	---	-----	---	----	---	Upland upper slope	4	Good	Good	Herbaceous	Hay	ID2b
1.58	268	21.1	11.6	90	---	-----	---	----	---	Upland upper slope	12	Good	Good	Hardwood forest	Undisturbed	ID1
2.40‡	300+‡	33.4	15.0	92	---	-----	---	----	---	Terrace flat	0	Medium	Good	Jack and white pine	Undisturbed	IIB2
----	---	22.7	15.1	94	---	-----	---	----	---	Bottomland flat	0	Medium	Good	Herbaceous	Undisturbed	ID1
0.77	122	25.5	17.9	78	---	-----	---	----	---	Bottomland flat	0-2	Medium	Good	Herbaceous	Hay	ID2c
1.30‡	300+‡	20.5	11.7	98	---	-----	---	----	---	Upland flat	0-2	Medium	Good	Herbaceous	Undisturbed	ID2c
1.54	242	23.1	12.1	97	---	-----	---	----	---	Upland slope	6-8	Good	Good	Hardwood forest	Undisturbed	ID2c
1.97	284	27.1	14.1	92	---	-----	---	----	---	Upland slope	3-6	Medium	Good	Hardwood forest	Undisturbed	ID2c
1.44‡	276‡	22.3	12.7	96	---	-----	---	----	---	Upland flat		Medium	Good	Herbaceous	Grazed	ID1
1.06‡	300+‡	22.1	12.5	97	---	-----	---	----	---	Upland slope	4-6	Good	Good	Herbaceous	Grazed	ID2c
0.79	146	34.1	25.0	96	---	-----	---	----	---	Upland upper slope	2-4	Good	Medium	Herbaceous	Hay	ID2b
0.57	96	26.4	21.0	95	---	-----	---	----	---	Upland slope	4-6	Good	Good	Hardwood forest	Undisturbed	ID2c
0.64	94	27.4	22.3	97	---	-----	---	----	---	Upland slope	4-6	Good	Good	Herbaceous	Hay	ID2c
0.70	122	31.1	24.1	93	---	-----	---	----	---	Upland flat	0	Good	Medium	Herbaceous	Hay	ID2b
0.75	141	33.0	28.7	100	---	-----	---	----	---	Upland slope	3-6	Good	Good	Herbaceous	Undisturbed	ID2c
0.61	98	47.4	41.3	100	---	-----	---	----	---	Upland upper flat		Medium	Medium	Herbaceous	Hay	ID2b
1.27‡	300+‡	23.6	10.9	94	---	-----	---	----	---	Upland upper slope	4-6	Good	Good	Herbaceous	Grazed	ID1
0.42	151	42.3	34.1	103	---	-----	---	----	---	Terrace flat	0-1	Good	Medium	Heavy wet clay soil	Cultivated	ID
0.42	149	42.3	34.1	97	---	-----	---	----	---	Terrace flat		Good	Poor	Herbaceous	Lake	IIC1
0.74‡	122‡	24.0	14.1	82	---	-----	---	----	---	Upland slope	4-6	Good	Good	Herbaceous	Undisturbed	ID2a
0.72	265	31.3	23.1	94	---	-----	---	----	---	Upland upper flat	1-2	Good	Good	Herbaceous	Undisturbed	IIIA1
0.82	254	34.1	24.1	97	---	-----	---	----	---	Upland upper slope	4-6	Good	Med-good	Herbaceous	Hay	IIIA1
0.92	228	34.7	28.4	99	---	-----	---	----	---	Upland upper flat		Medium	Poor	Herbaceous	Undisturbed	IIIA2
0.85	150	42.5	37.1	98	---	-----	---	----	---	Upland upper flat	2-4	Medium	Good-med	Herbaceous	Undisturbed	IIIA2
0.82	96	41.1	34.1	97	---	-----	---	----	---	Upland upper flat	2-4	Good	Good	Herbaceous	Hay	IIIA2
1.03‡	155‡	22.1	14.3	97	---	-----	---	----	---	Terrace flat		Medium	Good	Herbaceous	Undisturbed	IIB1
0.74	94	41.1	34.1	97	---	-----	---	----	---	Upland upper flat		Good	Good	Herbaceous	Hay	IIIA2
0.79	139	27.4	21.4	98	---	-----	---	----	---	Bottomland flat	0-2	Medium	Medium	Herbaceous	Undisturbed	IIIA2
1.44	300+	25.3	9.4	93	---	-----	---	----	---	Upland upper slope	4-6	Good	Good	Herbaceous	Undisturbed	IIIB
0.44	79	35.4	29.1	100	---	-----	---	----	---	Upland upper slope	4-6	Good	Good	Herbaceous	Undisturbed	IIIA1
0.55	112	37.6	32.2	99	---	-----	---	----	---	Upland ridge	4-6	Good	Good	Herbaceous	Hay	IIIA1
0.72	215	34.8	28.4	97	---	31.1	214	0.67	138	Terrace flat		Medium	Medium	Herbaceous	Grazed	IIB2
0.74‡	156‡	22.7	14.3	96	---	-----	---	----	---	Terrace flat	0-2	Medium	Good	Herbaceous	Hay	IIC1
0.80	126	37.4	31.3	98	---	44.4	111	0.74	93	Terrace flat	2-3	Medium	Poor	Herbaceous	Cultivated, grazed	IIIA1
0.75	148	34.4	34.3	97	---	-----	---	----	---	Upland upper slope	4-6	Good	Medium	Herbaceous	Undisturbed	IIIA2
0.83	124	35.4	28.4	98	---	-----	---	----	---	Upland ridge	4-6	Good	Poor	Herbaceous	Grazed	IIIA1
0.80	144	35.4	31.4	98	---	-----	---	----	---	Upland upper slope	4-6	Good	Medium	Herbaceous	Undisturbed	IIIA1
0.78	119	36.4	32.4	99	---	-----	---	----	---	Upland upper slope	4-6	Good	Med-good	Herbaceous	Hay	IIIA1
0.60‡	124‡	41.4	35.3	100	---	-----	---	----	---	Upland ridge	3-4	Good	Med-good	Herbaceous	Undisturbed	IIIA1
0.54	110	37.7	34.4	98	---	-----	---	----	---	Upland upper slope	4-6	Good	Medium	Herbaceous	Grazed	IIIA1
1.52	172	21.5	13.3	94	---	-----	---	----	---	Upland flat		Medium	Good	Hardwood forest	Undisturbed	IVA3
1.07	223	24.7	14.4	93	---	-----	---	----	---	Terrace flat	2-4	Good	Good	Hardwood forest	Undisturbed	IVA3
0.61	97	34.6	27.4	92	---	-----	---	----	---	Upland ridge	4-6	Good	Good	Herbaceous	Grazed	IIIA1
0.69	73	22.4	19.4	98	---	-----	---	----	---	Upland lower slope	3-5	Good	Good	Herbaceous	Cultivated	IVA3

(Continued)

Soil Data, 6- to 18-in. Layer

Site No.	Location: State	Location: County or Parish	USDA Soil Map Identification: Soil Series	0- to 6-in. USDA Type	Topography Class	USDA Texture by Wt, %: Type	Sand	Silt	Clay	% Fines	USCS Atterberg Limits: LL	PL	PI	USCS Type	Organic Cont. %	Dry Density lb/cu ft	Wet-Season Condition Average: MC, %	CI	RI	RCI	MC, % at Atmos Tension: 0	0.66	% Sat. at 0 Atmos Tension	High-Moisture Condition At Lowest RCI: Depth to Water Table, in.	MC %	CI	RI
Lake States Region (Continued)																											
48	Wis.	Jackson	Boone	SiL	High	SiL	16	73	11	91	27	21	6	CL-ML	3.13	79.3	29.9	159	0.75	120	37.8	32.1	92	---	----	---	--
49		Jackson	Vesper	SL	Low	SL	54	36	10	51	16	14	2	ML	1.05	91.1	19.0	148	0.59	87	27.6	22.5	90	---	----	---	--
50		Jackson	Union	SiL	High	SiL	20	50	18	79	26	19	7	CL-ML	0.55	89.3	22.0	189	0.55	108	30.7	25.4	96	---	----	---	--
51		Marathon	Spencer	SiL	High	SiL	19	67	14	89	32	26	6	ML	2.47	76.2	31.2	201	0.62	128	33.5	33.8	89	---	----	---	--
52		Marathon	Spencer	SiL	Low	SiL	12	67	21	95	37	22	15	CL	2.08	79.3	28.9*	104	0.55	56	39.0*	31.5	95*	8	28.9*	116	0.
53		Price	Gloucester	SiL	Low	SiL	37	56	7	71	21	--	NP	ML	1.45	83.0	28.9	174	0.33	58	34.1	27.3	91	12	34.5	130	0.
54		Price	Gloucester	SL	High	SL	71	25	4	29	20	--	NP	SM	0.86	74.9	22.9	165	2.79	300+	41.4	31.4	91	---	----	---	--
55		Price	Merrimack	SiL	Low	SiL	20	72	8	86	23	21	2	ML	2.60	79.3	30.4	160	0.54	89	38.0	32.4	94	---	----	---	--
56		Wood	Gloucester	SiL	High	SiL	20	69	11	83	24	21	3	ML	1.25	78.7	26.2	180	0.55	100	38.6	34.2	93	---	----	---	--
58	Minn.	Houston	Fayette	SiL	High	SiL	10	64	26	89	37	22	15	CL	0.55	91.1	27.5‡	96‡	0.74‡	71‡	29.7	26.6	96	---	----	---	--
59		Houston	Tama	SiL	Low	SiL	10	76	14	90	41	26	15	ML	3.77	76.8	29.4‡	173‡	0.59‡	102‡	38.3	32.8	88	---	----	---	--
60		Houston	Dubuque	L	High	L	47	39	14	59	24	15	9	CL	1.45	86.2	28.1	117	0.56	64	----	29.0	---	---	----	---	--
61	Iowa	Fayette	O'Neill	SL	High	SL	68	28	4	35	21	17	4	SM	3.96	84.9	----	---	----	---	30.9	24.8	86	---	----	---	--
62		Fayette	Carrington	L	High	L	47	39	14	61	35	23	12	CL	4.70	82.4	25.1‡	220‡	0.71‡	156‡	35.6	31.3	94	---	----	---	--
63		Fayette	Plainfield	SL	High	SL	70	20	10	34	15	13	2	SM	0.95	92.4	12.7	187	0.86	163	25.9	19.2	87	---	----	---	--
64		Buchanan	Clyde	L	Low	L	37	47	16	68	30	16	14	CL	1.05	93.0	26.8	93	0.88	82	28.6	23.8	95	8	25.7	96	0.
66		Buchanan	Carrington	L	Low	L	32	45	23	74	39	16	23	CL	2.23	85.5	29.3	135	1.13	149	32.6	27.7	92	---	----	---	--
67		Benton	Carrington	SL	High	SL	55	36	9	49	22	16	6	SM-SC	2.23	92.4	19.5	153	0.76	110	29.0	24.3	97	---	----	---	--
68		Benton	Carrington	SL	High	LS	78	17	5	28	15	--	NP	SM	0.86	96.1	12.5	209	1.23	238	----	10.1	---	---	----	---	--
69		Benton	Clinton	SiL	High	SiL	16	70	14	97	27	22	5	CL-ML	1.65	82.4	----	---	----	---	34.8	30.2	91	---	----	---	--
70		Benton	Tama	SiL	High	SiL	10	71	19	98	45	27	18	ML	3.77	76.2	29.0‡	190‡	0.89‡	176‡	38.2	33.6	86	---	----	---	--
71		Tama	Tama	SiL	High	SiL	10	72	18	96	44	26	18	CL	3.96	68.7	34.2	155	0.76	117	46.3	39.1	88	---	----	---	--
72		Tama	Muscatine	SiL	High	SiL	9	70	21	97	45	24	21	CL	2.75	70.5	31.6	176	0.83	148	45.3	35.3	89	---	----	---	--
73		Tama	Wabash	SiL	High	SiL	24	62	14	89	55	34	21	MH	5.34	63.0	39.0	159	0.77	122	56.9	46.2	93	---	----	---	--
74		Tama	Carrington	SiL	High	SiL	30	53	17	77	35	21	14	CL	2.87	78.7	23.8	184	0.69	127	35.4	28.3	83	---	----	---	--
75		Jasper	Muscatine	SiL	High	SiL	8	69	23	98	41	24	17	CL	3.62	84.9	25.2‡	209‡	0.86‡	180‡	34.9	28.7	98	---	----	---	--
76		Jasper	Wabash	SiL	High	SiL	11	68	21	95	47	27	20	CL	4.90	78.7	30.4	170	0.85	145	39.1	33.0	94	---	----	---	--
77		Warren	Shelby	SiL	High	SiL	20	61	19	88	39	22	17	CL	3.54	76.2	25.3	177	0.83	147	39.9	31.0	90	---	----	---	--
78		Warren	Sharpsburg	SiL	High	SiL	10	65	25	98	44	25	19	CL	4.15	77.4	28.6	158	0.78	124	37.9	31.5	89	---	----	---	--
79		Madison	Sharpsburg	SiL	High	SiL	10	70	20	97	45	26	19	CL	4.05	76.2	29.3‡	230‡	0.86‡	198‡	41.3	34.9	94	---	----	---	--
80		Madison	Shelby	SiL	High	SiC	7	47	46	97	51	22	29	CH	3.69	89.9	29.2	156	1.03	163	31.7	31.0	98	---	----	---	--
81		Madison	Winterset	SiL	High	SiL	9	67	24	97	45	23	22	CL	3.62	84.9	27.9‡	218‡	0.86‡	187‡	34.5	26.5	96	---	----	---	--
82		Adair	Tama	SiL	High	SiCL	6	65	29	99	47	21	26	CL	0.46	91.1	----	---	----	---	30.6	29.7	99	---	----	---	--
83		Adair	Shelby	L	High	CL	33	38	29	75	41	21	20	CL	1.33	89.3	23.2‡	200‡	1.00‡	200‡	31.7	29.9	99	---	----	---	--
84		Adair	Winterset	SiL	High	SiL	15	67	18	92	47	28	19	ML	4.70	74.3	34.2	141	0.81	114	42.4	39.1	92	---	----	---	--
85		Cass	Unclassified	SiCL	Low	SiCL	11	58	31	97	52	22	30	CH	1.05	81.8	33.8	160	0.98	157	38.5	30.7	98	---	----	---	--
86		Cass	Shelby	SiL	High	SiL	8	67	25	99	43	21	22	CL	0.87	82.4	----	---	----	---	37.0	32.3	97	---	----	---	--
87		Audubon	Tama	SiL	High	SiL	11	64	25	91	40	23	17	CL	2.60	80.5	28.1‡	235‡	0.87‡	204‡	37.2	32.9	93	---	----	---	--
88		Audubon	Wabash	L	High	SiL	10	67	23	98	48	27	21	CL	3.96	62.4	33.3‡	139‡	0.79‡	110‡	53.5	43.2	86	---	----	---	--
89		Audubon	Marshall	SiL	High	SiL	7	72	21	100	43	25	18	CL	0.86	67.4	----	---	----	---	50.7	40.2	92	---	----	---	--
90		Greene	Storden	SiL	High	L	30	48	22	78	33	16	17	CL	1.45	86.2	20.7	126	0.91	116	32.6	28.9	94	---	----	---	--
91		Greene	O'Neill	SiL	High	SiL	31	52	17	75	34	20	14	CL	3.27	79.3	25.8‡	186‡	0.86‡	160‡	36.6	30.5	94	---	----	---	--
92		Greene	Webster	SiL	Low	L	34	49	17	72	43	22	21	CL	4.15	78.7	26.8‡	211‡	1.02‡	215‡	40.3	34.8	97	---	----	---	--
93		Webster	Webster	SiL	Low	L	40	48	12	68	50	25	25	CL	4.90	77.4	37.1‡	151‡	0.96‡	145‡	39.4	34.7	92	---	----	---	--
94		Webster	Clarion	L	Low	L	35	46	19	72	29	16	13	CL	1.98	96.1	21.9‡	163‡	0.96‡	156‡	24.2	22.9	89	---	----	---	--
95		Humboldt	Hayden	SL	Low	SL	55	33	12	50	32	19	13	CL	3.13	86.2	29.9‡	149‡	0.80‡	119‡	31.8	27.8	92	---	----	---	--
96		Humboldt	Clarion	L	High	L	45	43	12	67	36	20	16	CL	3.96	76.8	22.7	122	0.91	102	37.1	33.8	85	---	----	---	--
97		Kossuth	Unclassified	SL	High	L	42	47	11	63	37	21	16	CL	3.77	76.2	----	---	----	---	38.6	35.6	87	---	----	---	--
98		Kossuth	Nicolett	SL	Low	L	47	38	15	57	43	24	19	CL	5.12	69.9	29.0‡	182‡	0.86‡	157‡	47.2	43.0	92	---	----	---	--
99		Winnebago	Webster	SiL	Low	SiL	10	67	23	98	34	21	13	CL	0.86	71.8	28.7‡	181‡	0.90‡	163‡	45.0	37.9	92	---	----	---	--
102	Minn.	Freeborn	Unclassified	SiL	High	SiL	30	56	14	78	36	21	15	CL	3.62	89.5	28.4‡	160‡	0.78‡	125‡	33.6	29.7	95	---	----	---	--
103		Freeborn	Unclassified	SL	High	SL	56	30	14	50	24	15	9	SC	1.98	88.6	19.5‡	228‡	0.78‡	178‡	29.8	26.6	91	---	----	---	--
104		Waseca	Webster	L	High	L	36	47	17	72	46	28	18	ML	4.34	76.2	----	---	----	---	42.6	39.0	96	---	----	---	--
105		Waseca	Clarion	L	High	L	41	39	20	68	31	17	14	CL	1.15	83.7	27.7‡	173‡	0.67‡	116‡	32.0	29.4	87	---	----	---	--
106		Dakota	Etter	SL	High	SL	75	18	7	27	17	16	1	SM	1.25	87.4	16.3‡	110‡	0.96‡	106‡	27.0	23.0	80	---	----	---	--
107		Dakota	Marshan	SiL	Low	SiL	38	54	8	76	50	27	23	CL	1.63	72.4	31.9‡	132‡	0.89‡	117‡	42.3	36.6	87	---	----	---	--
108	Wis.	St. Croix	Jewett	SiL	High	L	39	49	12	69	23	17	6	CL-ML	1.25	93.0	19.5	168	0.86	147	26.8	21.4	91	---	----	---	--
109		St. Croix	Onamia	SiL	Low	SiL	24	65	11	83	38	26	12	ML	4.90	75.5	30.6‡	174‡	0.42‡	73‡	40.6	28.2	90	---	----	---	--
110		St. Croix	Dakota	L	High	L	46	45	9	61	22	16	6	CL-ML	1.88	132.4	15.0‡	153‡	0.59‡	90‡	21.4	20.2	92	---	----	---	--
111		St. Croix	Milaca	SL	High	SL	67	26	7	34	13	--	NP	SM	0.95	103.0	21.1‡	125‡	0.55‡	69‡	19.4	18.4	95	---	----	---	--
112		Polk	Spooner	SiL	High	SiL	27	63	10	84	25	17	8	CL	0.62	91.1	----	---	----	---	26.9	23.3	85	---	----	---	--
113		Polk	Freer	SiL	High	SiL	32	48	20	81	26	22	4	ML	2.75	83.6	----	---	----	---	33.9	28.0	90	---	----	---	--
114		Rusk	Unclassified	SiL	High	SiL	27	65	8	77	22	22	0	ML	1.45	81.8	----	---	----	---	31.0	24.8	80	---	----	---	--
115		Rusk	Spencer	L	High	SL	60	36	4	48	17	--	NP	SC	1.65	83.7	----	---	----	---	32.7	23.1	89	---	----	---	--
116		Rusk	Unclassified	SL	High	SL	71	25	4	42	14	--	NP	SM	1.15	91.8	15.9‡	239‡	0.62‡	148‡	25.0	20.7	82	---	----	---	--
117		Rusk	Unclassified	SiL	High	SiL	36	55	9	71	29	17	3	ML	1.25	88.0	----	---	----	---	28.2	24.7	85	---	----	---	--
118		Oneida	Plainfield	SL	High	SL	72	23	5	34	14	--	NP	SM	1.15	88.8	16.1	151	1.15	181	47.9	34.5	86	---	----	---	--
119		Oneida	Vilas	SL	High	SL	61	35	4	49	20	--	NP	SM	1.45	74.9	20.5	157	0.81	134	39.8	31.3	87	---	----	---	--
120		Oneida	Plainfield	LS	High	LS	86	11	3	22	14	--	NP	SM	1.05	72.4	22.5	123	1.38	169	40.1	30.1	83	---	----	---	--
121		Price	Kennan	SL	High	SL	60	34	6	47	26	--	NP	SM	2.87	64.9	----	---	----	---	51.4	30.2	88	---	----	---	--
122		Price	Kennan	SL	High	SL	50	46	4	63	25	--	NP	ML	2.23	73.6	32.9	172	0.61	105	42.8	34.0	90	---	----	---	--
123		Ashland	Ontonagon	SL	Low	SL	73	23	4	36	21	--	NP	SM	1.45	84.9	34.6	162	0.39	66	34.7	29.5	97	<6	34.6	139	0.
124		Bayfield	Ontonagon	L	Low	CL	14	36	50	91	55	22	33	CH	1.05	85.5	----	---	----	---	36.5	34.9	101	---	----	---	--
125		Bayfield	Ontonagon	L	Low	CL	21	41	38	84	41	19	22	CL	1.55	89.3	----	---	----	---	33.9	32.0	106	---	----	---	--
126	Minn.	Aitkin	Unclassified	SiL	High	SiL	40	53	7	72	17	17	0	ML	0.55	85.5	----	---	----	---	30.7	26.3	87	---	----	---	--
127		Aitkin	Unclassified	SiL	High	SiL	22	72	6	92	20	--	NP	ML	0.70	81.5	26.0	130	0.42	54	33.8	29.0	88	---	----	---	--
128		Cass	Unclassified	SiL	Low	SiL	12	69	19	96	23	19	4	CL-ML	1.65	81.2	----	---	----	---	----	20.2	---	---	----	---	--
129		Cass	Unclassified	L	High	SiCL	15	57	28	89	39	22	17	CL	1.15	66.2	----	---	----	---	34.1	30.4	98	---	----	---	--
130		Hubbard	Hubbard	SL	High	SL	68	27	5	37	16	--	NP	SM	1.25	87.4	----	---	----	---	31.2	27.6	92	---	----	---	--
131		Hubbard	Todd	LS	High	LS	84	13	3	22	12	--	NP	SM	0.78	93.6	8.5‡	300‡	0.81‡	243‡	22.2	17.6	76	---	----	---	--
132		Hubbard	Menahga	LS	High	LS	86	9	5	16	13	--	NP	SM	0.46	96.8	7.8‡	211‡	1.51‡	300+‡	23.2	9.2	86	---	----	---	--
133		Hubbard	Hubbard	SL	High	LS	74	22	4	28	16	--	NP	SM	2.08	94.9	----	---	----	---	24.8	18.4	89	---	----	---	--
134		Hubbard	Rockwood	LS	High	SL	73	22	5	33	14	--	NP	SM	0.86	91.1	7.1‡	232‡	1.14‡	264‡	25.9	18.1	84	---	----	---	--
135		Becker	Unclassified	L	Low	L	40	47	13	66	38	25	13	ML	5.12	81.8	22.6‡	191‡	0.44‡	78‡	35.6	32.9	92	---	----	---	--
136		Becker	Pierce	SL	High	LS	84	10	6	18	15	--	NP	SM	2.35	93.6	----	---	----	---	24.8	14.3	85	---	----	---	--
137		Otter Tail	Barnes	L	High	SiL	30	50	20	73	34	18	16	CL	2.75	76.2	----	---	----	---	39.5	31.7	89	---	----	---	--
138		Otter Tail	Barnes	SL	High	SL	60	32	8	48	35	21	14	SC	3.90	71.2	----	---	----	---	45.5	35.7	91	---	----	---	--
139		Wilkin	Fargo	CL	High	SiCL	16	46	38	88	55	21	34	CH	0.90	76.2	28.7	199	0.99	198	43.3	38.3	96	---	----	---	--
140		Wilkin	Grimstad	L	Low	SL	58	27	15	79	31	18	13	CL	2.75	84.3	18.1‡	215‡	0.77‡	166‡	----	26.6	---	---	----	---	--
142		Wilkin	Ulen	L	Low	SiC	16	44	40	88	50	19	31	CL	1.15	89.9	26.4	131	0.96	126	30.1	28.4	93	---	29.4	100	0.

(Continued)

* Questionable value, not used in analysis.
‡ Single site reading.

Condition	MC, % at Atmos Tension		% Sat. at 0 Atmos Tension	High-Moisture Condition At Lowest RCI					Site Environmental Data						
RCI	0	5.0b		Depth to Water Table, in.	MC %	CI	RI	Lowest RCI	Topographic Position	Slope %	Drainage Surface	Drainage Internal	Vegetation	Land Use	Eng. Conf. Land Form
				Lake States Region (Continued)											
120	37.8	32.1	92	---	----	---	----	---	Upland lower slope	3-5	Good	Good	Herbaceous	Grazed	IVA3
87	27.6	22.5	90	---	----	---	----	---	Upland ridge	2-3	Good	Med-poor	Herbaceous	Cultivated	IVA2
108	30.7	25.4	96	---	----	---	----	---	Upland ridge	5	Good	Good	Herbaceous	Undisturbed	IIIA1
128	39.5	33.8	89	---	----	---	----	---	Upland upper slope	5-8	Good	Poor	Herbaceous	Hay	ID2b
56	39.0*	31.5	95*	8	28.9*	116	0.42	49	Bottomland flat	2-3	Medium	Poor	Herbaceous	Undisturbed	ID2b
58	34.2	27.3	91	12	34.5	130	0.27	35	Upland ridge	4-6	Good	Good	Herbaceous	Grazed	ID2b
300+	41.4	31.4	91	---	----	---	----	---	Upland upper slope	10-14	Good	Good	Hardwood forest	Undisturbed	ID2b
89	38.0	32.4	94	---	----	---	----	---	Upland flat	0-2	Medium	Medium	Herbaceous	Grazed	ID2b
130	38.0	34.2	93	---	----	---	----	---	Upland upper slope	15	Good	Medium	Herbaceous	Hay	ID2b
71‡	29.7	26.0	96	---	----	---	----	---	Upland ridge	10-12	Good	Good	Herbaceous	Grazed	IIIA1
102‡	38.3	32.8	88	---	----	---	----	---	Upland upper slope	3-4	Good	Med-good	Herbaceous	Undisturbed	IIIA1
64	----	29.0	---	---	----	---	----	---	Upland lower slope	2-3	Medium	Medium	Herbaceous	Grazed	IIIA1
---	30.9	24.8	86	---	----	---	----	---	Terrace flat	2-3	Medium	Good	Herbaceous	Undisturbed	IIC1
156‡	35.6	31.3	94	---	----	---	----	---	Upland upper slope	5-6	Good	Good-med	Herbaceous	Cultivated	ID2a
163	29.9	25.2	87	---	----	---	----	---	Terrace flat	2-3	Medium	Good	Herbaceous	Hay	ID1
82	28.0	23.8	95	8	25.7	96	0.84	81	Bottomland flat	0	Poor	Poor	Herbaceous	Grazed	IIB1
149	32.6	27.7	92	---	----	---	----	---	Upland upper slope	5-6	Good	Medium	Herbaceous	Undisturbed	IIIA2
116	29.0	24.3	97	---	----	---	----	---	Upland ridge	3-5	Good	Good	Herbaceous	Lawn	ID2a
258	----	10.1	---	---	----	---	----	---	Upland lower slope	5-8	Good	Good	Herbaceous	Grazed	ID2a
---	34.8	30.2	91	---	----	---	----	---	Upland ridge	8-10	Good	Good	Forest and herbaceous	Undisturbed	IIIA1
176‡	38.2	33.6	86	---	----	---	----	---	Upland ridge	10-12	Good	Medium	Herbaceous	Hay	IIIA1
117	46.3	39.1	88	---	----	---	----	---	Upland upper flat	0	Medium	Good-med	Herbaceous	Hay	IIIA2
148	45.3	35.3	89	---	----	---	----	---	Upland upper flat	0	Med-poor	Medium	Herbaceous	Grazed	IIIA2
122	36.4	40.2	93	---	----	---	----	---	Bottomland flat	5	Med-good	Medium	Herbaceous	Undisturbed	IIB1
127	33.4	28.3	83	---	----	---	----	---	Upland lower slope	8-10	Good	Good	Herbaceous	Grazed	ID2a
180‡	34.4	28.7	98	---	----	---	----	---	Upland flat	0	Medium	Med-good	Herbaceous	Undisturbed	IIIA2
145	39.0	33.0	94	---	----	---	----	---	Bottomland flat	0	Medium	Med-poor	Herbaceous	Undisturbed	IIB2
147	39.4	31.0	96	---	----	---	----	---	Bot. terrace slope	5-10	Good	Poor	Herbaceous	Undisturbed	ID2a
124	37.4	31.5	89	---	----	---	----	---	Upland ridge	2-3	Medium	Good	Herbaceous	Hay	IIIA2
138‡	41.3	34.7	94	---	----	---	----	---	Upland upper flat	0-3	Medium	Good-med	Herbaceous	Lawn	IIIA2
163	31.7	31.0	98	---	----	---	----	---	Upland upper slope	20-30	Good	Medium	Herbaceous with some trees	Grazed	ID2a
187‡	34.5	26.5	96	---	----	---	----	---	Upland upper flat	0	Medium	Good	Herbaceous with some trees	Lawn	IIIA2
---	30.6	29.7	99	---	----	---	----	---	Upland upper flat	2-3	Good	Poor	Herbaceous	Undisturbed	IIIA2
200‡	31.7	29.9	99	---	----	---	----	---	Upland lower slope	0-3	Medium	Medium	Herbaceous	Grazed	ID2a
114	42.4	39.1	92	---	----	---	----	---	Terrace flat	0	Poor	Good	Herbaceous	Undisturbed	IB1
157	30.5	30.7	98	---	----	---	----	---	Bottomland flat	0	Poor	Medium	Herbaceous	Undisturbed	IIB1
---	37.0	32.3	97	---	----	---	----	---	Upland ridge	50	Good	Poor	Herbaceous	Undisturbed	ID2a
204‡	37.2	32.9	93	---	----	---	----	---	Upland upper slope	10-12	Good	Good	Herbaceous	Grazed	IIIA2
110‡	53.5	43.2	86	---	----	---	----	---	Bottomland flat	0	Poor	Medium	Herbaceous	Undisturbed	IIB1
---	50.7	40.2	92	---	----	---	----	---	Upland upper slope	10-12	Good	Good	Herbaceous	Grazed	IIIA2
116	32.6	28.9	94	---	----	---	----	---	Upland lower slope	40	Good	Good-med	Herbaceous with some trees	Grazed	ID2a
160‡	38.6	30.5	94	---	----	---	----	---	Upland lower slope	10-14	Good	Good	Herbaceous with some trees	Grazed	ID1
215‡	40.3	34.8	97	---	----	---	----	---	Upland depression	3-4	Poor	Poor	Herbaceous	Grazed	ID2b
145‡	39.4	34.7	92	---	----	---	----	---	Upland lower slope	2-3	Medium	Poor	Herbaceous	Grazed	ID2b
156‡	24.2	22.9	89	---	----	---	----	---	Upland flat	0	Medium	Medium	Herbaceous	Hay	ID2b
119‡	31.8	27.8	92	---	----	---	----	---	Upland ridge	3-5	Good	Medium	Herbaceous with some trees	Grazed	ID2b
102	37.1	33.8	85	---	----	---	----	---	Upland flat	2-3	Medium	Good	Herbaceous	Hay	ID2c
---	30.6	35.6	87	---	----	---	----	---	Upland flat	2-3	Poor	Good	Herbaceous	Grazed	ID2c
157‡	47.2	43.0	92	---	----	---	----	---	Upland lower slope	0	Medium	Medium	Herbaceous	Hay	ID2c
163‡	45.5	37.9	92	---	----	---	----	---	Bottomland flat	0	Poor	Medium	Herbaceous with some trees	Grazed	IIB1
125‡	33.6	29.7	95	---	----	---	----	---	Upland ridge	5-10	Good	Good	Herbaceous	Hay	ID2b
178‡	29.8	26.6	91	---	----	---	----	---	Upland upper slope	8-10	Good	Good	Hardwood forest	Undisturbed	ID2c
---	42.6	39.0	96	---	----	---	----	---	Upland upper slope	3-4	Good	Poor	Herbaceous	Grazed	ID2c
116‡	32.0	29.4	87	---	----	---	----	---	Bottomland flat	2-3	Poor	Medium	Herbaceous	Grazed	ID2b
106‡	27.0	23.0	85	---	----	---	----	---	Upland ridge	5-10	Good	Good	Herbaceous	Undisturbed	ID2c
117‡	42.3	36.6	87	---	----	---	----	---	Bottomland depression	0	Poor	Medium	Herbaceous	Undisturbed	ID2c
147	26.8	21.4	91	---	----	---	----	---	Upland upper slope	1-10	Good	Good	Herbaceous	Hay	ID2c
73‡	40.6	28.2	90	---	----	---	----	---	Upland flat	0-2	Medium	Medium	Herbaceous	Undisturbed	ID2b
90‡	21.4	20.2	92	---	----	---	----	---	Upland ridge	0-5	Medium	Medium	Herbaceous	Hay	ID2
69‡	19.4	18.4	85	---	----	---	----	---	Upland upper slope	2	Medium	Good	Hardwood forest	Undisturbed	ID2a
---	26.9	23.3	87	---	----	---	----	---	Upland ridge	6	Good	Medium	Herbaceous with some trees	Grazed	ID2a
---	33.9	28.0	90	---	----	---	----	---	Upland upper flat	2	Good	Medium	Herbaceous	Hay	ID2b
---	31.9	24.8	80	---	----	---	----	---	Upland upper slope	3-5	Good	Medium	Herbaceous	Undisturbed	ID2b
---	32.7	23.1	89	---	----	---	----	---	Upland upper slope	5-9	Good	Med-poor	Aspen and maple brush cover	Undisturbed	ID2c
148‡	25.1	20.7	82	---	----	---	----	---	Upland upper flat	0	Good	Good	Herbaceous	Grazed	ID2c
---	26.2	24.7	85	---	----	---	----	---	Upland upper flat	3-4	Good	Medium	Aspen with herbaceous cover	Undisturbed	ID2b
191	47.9	34.5	86	---	----	---	----	---	Upland ridge	0	Poor	Good	Jack pine and birch, bracken fern understory	Undisturbed	ID2c
134	39.8	31.3	87	---	----	---	----	---	Upland ridge	0	Good	Good	Maple, aspen, and white pine herbaceous understory	Undisturbed	ID2c
169	40.1	30.1	83	---	----	---	----	---	Upland ridge	0	Medium	Good	Jack pine and alder, herbaceous understory	Undisturbed	ID2c
---	51.4	30.2	88	---	----	---	----	---	Bottomland flat	0	Medium	Good	Herbaceous, maple, and alder underbrush	Undisturbed	ID2c
105	42.8	34.0	96	---	----	---	----	---	Upland upper slope	3-5	Good	Medium	Herbaceous	Grazed	ID2c
66	34.7	29.5	97	46	34.6	139	0.36	42	Upland lower slope	2-4	Good	Medium	Black ash, sugar maple, and aspen	Undisturbed	ID2c
---	36.5	34.9	101	---	----	---	----	---	Upland upper slope	3-5	Good	Poor	Herbaceous	Hay	IC
---	33.9	32.0	106	---	----	---	----	---	Bottomland depression	0	Poor	Poor	Herbaceous	Grazed	IC
---	30.7	26.3	87	---	----	---	----	---	Bottomland flat	0	Poor	Poor	Aspen and dense brush understory	Undisturbed	ID2b
54	33.8	29.0	86	---	----	---	----	---	Upland upper slope	5-7	Good	Medium	Hardwood forest	Undisturbed	ID2b
---	----	20.2	---	---	----	---	----	---	Bottomland	3-5	Good	Poor	Hardwood forest	Undisturbed	ID2b
---	34.1	30.4	98	---	----	---	----	---	Upland upper slope	10-15	Good	Medium	Hardwood forest	Undisturbed	ID2b
---	31.2	27.6	92	---	----	---	----	---	Upland upper slope	2-3	Good	Good	Herbaceous	Grazed	ID1
243‡	22.2	17.6	76	---	----	---	----	---	Upland upper slope	6-8	Good	Good	Herbaceous	Grazed	ID1
300+‡	23.2	9.2	86	---	----	---	----	---	Upland upper slope	5-6	Good	Good	Pine forest	Undisturbed	ID1
---	24.8	18.4	89	---	----	---	----	---	Upland upper slope	3-4	Good	Good	Herbaceous	Undisturbed	ID2c
264‡	25.9	18.1	84	---	----	---	----	---	Upland upper slope	5-6	Good	Good	Herbaceous	Undisturbed	ID2c
78‡	35.6	32.9	92	---	----	---	----	---	Bottomland	3-4	Medium	Med-poor	Herbaceous	Grazed	IC
---	24.8	14.3	85	---	----	---	----	---	Upland upper slope	10-12	Good	Good	Hardwood forest, herbaceous understory	Undisturbed	ID2c
---	39.5	31.7	89	---	----	---	----	---	Upland upper slope	10-12	Good	Medium	Herbaceous	Hay	ID2c
---	45.5	35.7	91	---	----	---	----	---	Upland upper slope	20-25	Good	Medium	Herbaceous	Grazed	ID2c
178	43.3	38.3	96	---	----	---	----	---	Bottomland	0	Poor	Med-poor	Flax	Cultivated	IC
166‡	----	26.6	---	---	----	---	----	---	Bottomland	0	Poor	Medium	Flax	Cultivated	IC
126	30.1	28.4	93	---	29.4	100	0.96	96	Bottomland	0-3	Medium	Poor	Herbaceous	Undisturbed	IC

(Continued)

2

Table B4 (Continued)

Site No.	Location State	Location County or Parish	USDA Soil Map Identification Soil Series	0- to 6-in. USDA Type	Topography Class	Soil Data, 6- to 12-in. Layer: USDA Type	USDA Texture by Wt, % Sand	Silt	Clay	% Fines	USCS Atterberg Limits LL	PL	PI	USCS Type	Organic Cont %	Dry Density lb/cu ft	Wet-Season Condition Average MC, %	CI	RI	RCI	MC, % at Atmos Tension 0	0.06	% Sat. at 0 Atmos Tension	High-Moisture Co At Lowest RCI Depth to Water Table, in.	MC %	CI
Lake States Region (Continued)																											
143	Minn.	Grant	Bearden	L	Low	L	51	36	13	62	37	19	18	CL	3.00	73.7	31.1	124	0.94	114	----	35.6	---	---	----	---
144		Grant	Unclassified	SiL	Low	L	36	40	24	74	36	17	19	CL	2.47	78.7	27.6	142	0.97	138	38.7	36.2	93	---	----	---
146		Stevens	Fargo	SiL	Low	SiL	25	53	22	94	54	30	24	MH	5.96	69.9	29.7‡	183‡	1.30‡	238‡	49.1	41.9	95	---	----	---
147		Stevens	Sioux	SiL	High	SiL	33	58	9	82	39	22	17	CL	3.69	77.4	21.8‡	196‡	1.10‡	218‡	39.1	35.3	91	---	----	---
148		Stevens	Clarion	SiL	High	SiL	25	64	11	87	45	22	23	CL	5.62	78.0	28.3	145	0.91	131	38.8	36.5	92	---	----	---
149		Swift	Unclassified	SL	High	SL	65	22	13	43	31	17	14	SC	4.34	83.0	22.8	200	1.05	209	31.6	26.9	84	---	----	---
150		Swift	Unclassified	LS	High	S	88	9	3	17	19	--	NP	SM	2.08	89.9	----	---	----	---	28.6	21.9	90	---	----	---
151		Kandiyohi	Unclassified	SL	High	SL	59	33	8	53	31	22	9	CL	5.56	69.3	34.5‡	193‡	0.75‡	145‡	48.0	37.6	92	---	----	---
152		Kandiyohi	Unclassified	SL	High	SL	68	27	5	38	26	--	NP	SM	5.12	73.7	----	---	----	---	43.0	33.1	92	---	----	---
153		Stearns	Unclassified	SL	High	SL	63	26	11	39	27	15	12	SC	5.62	89.3	19.2‡	194‡	0.86‡	167‡	28.8	25.0	90	---	----	---
154		Benton	Unclassified	LS	High	SL	64	27	9	43	19	14	5	SM-SC	1.65	95.5	14.8‡	202‡	1.39‡	262‡	24.5	20.6	89	---	----	---
155		Mille Lacs	Onamia	SiL	Low	L	42	50	8	73	26	19	7	ML	0.78	92.4	19.8‡	231‡	0.90‡	208‡	26.4	23.6	89	---	----	---
156		Mille Lacs	Milaca	L	Low	SiL	29	59	12	82	22	17	5	ML	0.45	94.3	21.8‡	209‡	0.59‡	123‡	25.1	22.5	89	---	----	---
157		Mille Lacs	Adolph	SiL	Low	SiL	22	56	22	93	50	16	18	CL	1.23	90.5	25.1	166	0.71	116	27.0	23.8	86	---	27.9	117
158		Kanabec	Greenbush	SiL	High	SiL	32	51	17	73	17	16	1	ML	0.70	94.3	----	---	----	---	24.1	19.1	85	---	----	---
159		Kanabec	Milaca	SiL	High	SiL	23	65	12	87	26	24	2	ML	1.65	93.7	----	---	----	---	34.0	31.2	92	---	----	---
160		Kanabec	Onamia	SiL	High	SiL	34	55	11	74	22	20	2	ML	1.86	97.4	18.0‡	215‡	0.70‡	156‡	24.5	21.6	93	---	----	---
161		Pine	Adolph	SiL	High	SiL	44	50	6	65	17	16	1	ML	1.05	90.5	21.0‡	248‡	0.57‡	141‡	27.7	23.2	89	---	----	---
162		Pine	Freer	SiL	Low	L	35	49	16	74	31	23	8	ML	2.60	84.3	30.0	143	0.77	115	33.5	31.6	98	---	----	---
163		Pine	Milaca	SiL	High	SiL	31	65	6	80	21	19	2	ML	0.59	93.6	24.3	236	0.66	160	33.5	24.4	115	---	----	---
164		Pine	Onamia	SiL	High	SiL	45	52	3	62	22	--	NP	ML	0.86	89.3	----	---	----	---	----	27.5	---	---	----	---
165		Pine	Onamia	SL	High	LS	89	11	3	25	14	--	NP	SM	0.78	82.4	----	---	----	---	31.9	25.4	84	---	----	---
166		Pine	Onamia	SL	High	SL	76	18	6	53	15	11	4	ML	0.70	99.3	----	---	----	---	22.9	20.0	91	---	----	---
167		Pine	Cloquet	SL	High	SL	72	24	4	37	13	--	NP	SM	1.16	88.6	----	---	----	---	23.6	19.2	93	---	----	---
168	Wis.	Washburn	Unclassified	LS	High	LS	89	8	3	18	13	--	NP	SM	2.33	111.8	----	---	----	---	16.6	10.9	89	---	----	---
169		Washburn	Unclassified	SL	High	LS	78	20	2	32	12	--	NP	SM	1.99	92.4	----	---	----	---	25.8	21.8	87	---	----	---
170		Washburn	Unclassified	SiL	High	L	48	44	8	65	19	--	NP	ML	1.65	94.4	27.8	172	0.74	126	33.2	29.9	92	---	----	---
Intermountain Region																											
1	Utah	Davis	Unclassified	L	High	L	44	36	19	47	41	25	16	ML	1.24	92.7	27.2‡	111‡	0.66‡	73‡	45.2	33.1	96	---	----	---
2		Davis	Unclassified	SiL	High	SiL	42	22	7	43	21	--	NP	ML	2.47	81.2	----	---	----	---	38.2	24.7	97	---	----	---
3		Davis	Unclassified	L	High	L	44	34	22	67	34	25	14	ML	3.68	78.7	----	---	----	---	40.6	32.5	98	---	----	---
4		Davis	Unclassified	L	Low	L	37	44	19	71	34	19	15	CL	3.77	82.4	----	---	----	---	27.6	25.3	93	---	----	---
5		Davis	Farmington	SiL	Low	SiL	21	47	33	91	43	21	22	OH	2.35	83.0	32	135	0.56	74	39.0	36.8	102	6	35.0	144
6		Davis	Trenton	SiL	Low	L	32	44	24	74	36	19	17	CL	3.41	93.0	24.4	127	0.76	82	28.6	27.6	97	18	25.4	134
7		Davis	Timpanogos	L	High	L	53	32	15	45	24	18	6	CL-ML	2.87	94.7	20.3‡	134‡	0.34‡	53‡	28.5	23.0	90	---	----	---
8		Salt Lake	Airport	SL	High	SL	74	21	5	26	31	24	7	SC	1.39	103.2	----	---	----	---	19.7	16.1	86	---	----	---
9		Salt Lake	Saltair	SiCL	Low	SiCL	8	34	58	92	37	17	20	CL	1.14	77.4	43.4	157	0.65	99	24.2	22.7	97	18	23.9	137
11		Salt Lake	Terminal	SiL	High	SiCL	6	43	51	87	44	18	26	CL	1.78	93.6	----	---	----	---	30.4	27.4	105	---	----	---
11		Salt Lake	Welby	L	Low	SL	51	34	15	47	22	15	7	CL-ML	1.25	98.8	21.1	175	0.48	84	24.4	19.8	95	36	19.6	160
12		Salt Lake	Taylorsville	SiL	High	L	21	44	35	93	31	18	13	CL	1.38	98.4	----	---	----	---	25.5	21.3	85	---	----	---
13		Salt Lake	Taylorsville	SiL	High	SiL	24	38	38	91	38	18	20	CL	1.58	94.4	22.6‡	134‡	0.52‡	196‡	27.5	23.4	89	---	----	---
14		Salt Lake	Taylorsville	SiL	Low	SiL	13	42	45	97	33	18	15	CL	1.32	94.4	27.6‡	206‡	0.66‡	136‡	28.0	25.6	91	---	----	---
15		Salt Lake	Terminal	SiL	Low	L	32	43	25	71	24	17	7	CL	1.44	94.4	18.4	151	0.52	46	28.9	24.5	91	10	30.0	136
16		Utah	Hirkham	SiCL	High	SiCL	14	44	42	93	43	19	24	CL	1.44	88.1	----	---	----	---	24.6	23.1	95	---	----	---
17		Utah	Welby	SiL	High	L	32	44	24	74	41	17	9	CL	2.76	98.6	23.1‡	143‡	0.34‡	77‡	29.6	22.0	90	---	----	---
18		Utah	McBeth	SiL	High	SiL	11	53	36	89	43	21	22	ML	4.15	75.7	51.3‡	171‡	0.73‡	126‡	46.9	33.7	87	---	----	---
19		Utah	Welby	L	Low	L	34	47	19	74	40	21	19	ML	3.66	75.	----	---	----	---	45.0	40.8	94	---	----	---
20		Utah	Red Rock	SL	Low	SL	74	16	10	44	20	13	7	CL-ML	1.08	98.1	----	---	----	---	23.4	20.3	89	---	----	---
21		Utah	Hirkham	L	Low	L	37	44	19	72	29	17	12	CL	1.23	93.4	23.1	146	0.47	74	25.6	24.4	97	10	25.4	139
22		Davis	Trenton	SiL	Low	SiL	6	44	50	94	44	21	23	CL	3.77	79.7	41.3‡	134‡	0.52‡	67‡	42.2*	37.8	101*	1	46.8	134
23		Davis	Trenton	SiL	Low	SiL	13	47	40	91	44	21	23	CL	3.16	87.4	33.3‡	134‡	0.61‡	65‡	31.9*	30.4	94*	8	33.3	106
24		Davis	Salt Lake	SiL	Low	SiL	14	44	42	94	41	19	22	ML	4.11	87.4	39.5	134	0.57	47	55.4*	52.2	100*	12	58.6	127
25	Utah	Davis	Kaysville	L	Low	L	41	41	18	59	32	17	15	ML	1.43	97.4	27.4‡	142‡	1.07‡	152‡	47.7	41.0	97	---	----	---
26		Davis	Clearfield	L	Low	SiL	20	44	36	80	36	--	NP	ML	2.23	93.7	----	---	----	---	40.2	37.2	96	---	----	---
27		Davis	Weber Valley	SiL	High	SiL	14	54	32	86	43	23	20	CL	4.13	92.4	44.1	147	0.52	72	34.1	29.5	95	---	----	---
28		Davis	Weber Valley	SiL	High	SiL	14	53	33	86	43	23	20	CL	4.13	92.4	----	---	----	---	32.6	29.2	94	---	----	---
29		Davis	Riverdale	SiL	High	SiL	8	57	35	92	44	21	23	CL	4.13	91.4	22.4‡	152‡	0.48‡	63‡	34.5	27.7	94	---	----	---
3		Davis	Riverdale	SiL	High	SiL	9	57	34	91	43	21	22	CL	4.13	92.4	25.3‡	134‡	0.58‡	73‡	36.2	31.2	93	---	----	---
31		Davis	Hyrum	SiL	High	SiL	9	57	34	91	43	21	22	CL	4.13	92.4	----	---	----	---	27.	25.6	93	---	----	---
32		Davis	Lyle	SiL	High	SiL	14	53	33	86	43	22	21	ML	4.13	92.4	----	---	----	---	33.5	33.8	101	---	----	---
34		Davis	Clearfield	SiL	High	SiL	14	53	33	86	43	22	21	ML	4.13	92.4	43.1‡	141‡	1.12‡	224‡	31.1	24.3	96	---	----	---
35		Davis	Clearfield	SiL	High	SiL	14	53	33	86	43	22	21	ML	4.13	92.4	----	---	----	---	40.8	40.1	100	---	----	---
37		Davis	Davis	SiL	High	SiL	14	53	33	86	43	22	21	CL-ML	4.13	92.4	43.1‡	141‡	1.48‡	224‡	32.8	23.4	98	---	----	---
37		Davis	Davis	SiL	High	SiL	14	53	33	86	43	22	21	CL-ML	4.13	92.4	----	---	----	---	37.8	32.5	98	---	----	---
38		Davis	Davis	SiL	High	SiL	14	53	33	86	43	22	21	CL	4.13	92.4	1.11	1.11	1.11	1.11	47.1	43.8	98	---	----	---
39		Davis	Orchard	SiL	High	SiL	14	53	33	86	43	22	21	CL	4.13	92.4	----	---	----	---	40.6	40.1	100	---	----	---
41		Davis	Orchard	SiL	High	SiL	14	53	33	86	43	22	21	CL	4.13	92.4	----	---	----	---	41.0	40.1	100	---	----	---
42		Davis	Parker	SiL	Low	SiL	13	49	38	91	44	21	23	CL	4.13	92.4	42.2‡	146‡	1.07‡	152‡	47.7	41.0	97	---	----	---
43		Davis	Kaysville	SiL	High	SiL	14	53	33	86	43	22	21	CL	4.13	92.4	----	---	----	---	37.1	31.7	96	---	----	---
45		Davis	Parker	SiL	Low	SiL	14	53	33	86	43	22	21	CL	4.13	92.4	47.1	147	0.93	243	24.3	17.4	96	---	----	---
46		Davis	Bountiful	SiL	Low	SiL	7	43	50	93	43	21	22	ML	4.13	92.4	41.4‡	134‡	0.44‡	208‡	22.3	15.7	92	---	----	---
49		Davis	Davis	L	High	SiL	14	53	33	86	43	22	21	ML	4.13	92.4	44.1‡	141‡	1.12‡	77‡	23.8	20.7	95	---	----	---
48		Davis	Bevery	L	High	SiL	14	53	33	86	43	22	21	ML	4.13	92.4	44.1‡	141‡	0.73‡	177‡	23.2	21.3	94	---	----	---
49		Riverdale	Davis	SiL	High	SiL	14	53	33	86	43	22	21	CL-ML	4.13	92.4	----	---	----	---	21.1	14.3	96	---	----	---
49		Riverdale	Parker	SiL	High	SiL	14	53	33	86	43	22	21	CL	4.13	92.4	----	---	----	---	35.3	28.9	102	---	----	---
47		Riverdale	Davis	SL	High	SiL	14	53	33	86	43	22	21	CL	4.13	92.4	----	---	----	---	24.4	20.8	92	---	----	---
50		Riverdale	Portneuf	SiL	High	SiL	14	53	33	86	43	22	21	ML	4.13	92.4	----	---	----	---	31.1	28.9	106	---	----	---
52		Riverdale	Portneuf	SiL	High	SiL	14	53	33	86	43	22	21	ML	4.13	92.4	----	---	----	---	34.3	35.2	105	---	----	---
53		Riverdale	Portneuf	SiL	High	SiL	14	53	33	86	43	22	21	CL	4.13	92.4	----	---	----	---	31.8	31.2	103	---	----	---
55		Bingham	Portneuf	L	High	SiL	14	53	33	86	43	22	21	ML	4.13	92.4	----	---	----	---	34.5	29.5	95	---	----	---
56		Butte	Unclassified	SiL	High	SiL	14	53	33	86	43	22	21	ML	4.13	92.4	----	---	----	---	32.4	34.4	93	---	----	---
57		Butte	Unclassified	SiL	High	SiL	14	53	33	86	43	22	21	ML	4.13	92.4	----	---	----	---	32.4	28.4	97	---	----	---
58		Butte	Unclassified	SiL	High	SiL	14	53	33	86	43	22	21	CL	4.13	92.4	1.11	1.11	1.11	1.11	40.6	36.7	100	---	----	---
59		Blaine	Unclassified	SiL	High	SiL	14	53	33	86	43	22	21	CL	4.13	92.4	----	---	----	---	35.2	14.4	82	---	----	---
60		Blaine	Unclassified	L	High	L	41	41	18	59	32	17	15	ML	3.43	97.4	----	---	----	---	47.4	41.7	93	---	----	---
59		Blaine	Unclassified	L	High	L	41	41	18	59	32	17	15	CL	3.43	97.4	----	---	----	---	24.9	22.6	97	---	----	---
9		Blaine	Unclassified	SiL	Low	SiL	20	7	73	95	62	44	18	MH	13.24	51.2	43.2	143	0.48	32	31.5	76.8	97	15	64.0	116
62		Gooding	Gooding	L	High	L	51	34	15	62	28	17	11	CL	2.69	97.4	----	---	----	---	14.8	17.2	97	---	----	---

(Continued)

* Overall mean value not used in analysis.
†† Data from site in soil survey, not used in analysis.
‡ Value from envelope.

Table B4 (Continued)

Layer																
Season Condition		MC, % at Atmos Tension		% Sat. at 0 Atmos Tension	High-Moisture Condition At Lowest RCI					Site Environmental Data						
Average					Depth to Water Table, in.	MC %	CI	RI	Lowest RCI	Topographic Position	Slope %	Drainage Surface	Drainage Internal	Vegetation	Land Use	Eng. Conf. Land Form
%	RI	RCI	0	0.06												
Lake States Region (Continued)																
0.94	114	----	35.6	---	---	----	---	----	---	Bottomland	0-3	Poor	Poor	Herbaceous	Hay	IC
0.97	138	36.7	36.2	93	---	----	---	----	---	Bottomland	0	Poor	Poor	Flax	Cultivated	IC
1.30‡	238‡	49.1	41.9	95	---	----	---	----	---	Bottomland depression	0	Poor	Medium	Herbaceous	Undisturbed	IC
1.10‡	218‡	39.1	35.3	91	---	----	---	----	---	Terrace slope	10	Good	Good	Herbaceous	Grazed	IC
0.91	131	38.8	36.5	92	---	----	---	----	---	Upland upper slope	2-3	Medium	Med-good	Flax	Cultivated	IC
1.05	209	31.6	20.9	84	---	----	---	----	---	Bottomland	0	Poor	Good	Herbaceous	Undisturbed	IC
----	---	28.6	21.9	90	---	----	---	----	---	Upland upper flat	0-3	Medium	Good	Herbaceous	Grazed	IC
0.75‡	145‡	48.0	37.6	92	---	----	---	----	---	Upland upper slope	5-8	Good	Good	Herbaceous	Hay	ID2c
----	---	43.0	33.1	92	---	----	---	----	---	Upland lower slope	10-15	Good	Good	Herbaceous	Grazed	ID2c
0.86‡	167‡	28.8	25.0	90	---	----	---	----	---	Upland upper flat	0	Medium	Medium	Herbaceous	Undisturbed	ID2c
1.30‡	263‡	24.5	20.6	89	---	----	---	----	---	Upland upper flat	0	Poor	Good	Herbaceous	Undisturbed	ID2c
0.90‡	208‡	26.4	23.6	89	---	----	---	----	---	Terrace flat	0	Poor	Poor	Herbaceous	Grazed	ID2b
0.59‡	123‡	29.1	22.5	87	---	----	---	----	---	Upland upper slope	3-5	Good	Poor	Herbaceous	Undisturbed	ID2b
0.71	116	27.0	23.0	86	---	29.7	117	0.74	87	Bottomland depression	2-3	Poor	Poor	Herbaceous	Grazed	ID2c
----	---	24.1	14.1	85	---	----	---	----	---	Terrace flat	2-3	Good	Medium	Herbaceous	Hay	ID1
----	---	34.1	31.2	92	---	----	---	----	---	Upland upper slope	10-14	Good	Good	Herbaceous	Grazed	ID2b
0.70‡	150‡	24.5	21.0	85	---	----	---	----	---	Upland upper slope	2-4	Good	Good	Herbaceous	Grazed	ID2c
0.57‡	141‡	27.7	23.2	84	---	----	---	----	---	Upland upper slope	10-12	Good	Medium	Birch with herbaceous understory	Undisturbed	ID2b
0.77	115	33.5	31.6	92	---	----	---	----	---	Bottomland depression	0	Poor	Poor	Herbaceous	Grazed	ID2c
0.66	166	33.1	24.4	112	---	----	---	----	---	Upland upper slope	4-6	Good	Poor	Herbaceous	Grazed	ID2b
----	---	----	27.1	---	---	----	---	----	---	Upland upper flat	0	Good	Good	Herbaceous	Undisturbed	ID2b
----	---	31.7	25.4	94	---	----	---	----	---	Upland upper slope	4-8	Good	Good	Aspen, oak, paper birch, maple, and alder	Undisturbed	ID2c
----	---	22.9	20.2	91	---	----	---	----	---	Upland upper slope	5-8	Good	Good	Herbaceous	Hay	ID2c
----	---	33.0	30.2	93	---	----	---	----	---	Upland upper slope	5-8	Poor	Poor	Aspen, birch, cherry, and alder brush	Undisturbed	ID2c
----	---	30.6	21.1	87	---	----	---	----	---	Upland flat	3	Good	Good	Herbaceous	Grazed	ID2c
----	---	25.8	21.8	87	---	----	---	----	---	Upland upper slope	5-8	Good	Good	Herbaceous, brush	Undisturbed	ID2c
0.74	126	33.2	24.4	92	---	----	---	----	---	Upland upper slope	5-8	Good	Medium	Hardwood forest	Undisturbed	ID2b
Intermountain Region																
0.66‡	73‡	47.2	33.4	98	---	----	---	----	---	Upland lower slope	8	Good	Good	Aspen, herbaceous understory	Undisturbed (exp forest)	IVB2
----	---	38.2	24.7	93	---	----	---	----	---	Upland ridge	1-2	Good	Good	Herbaceous	Undisturbed (exp plot)	IIC1
----	---	44.8	32.1	98	---	----	---	----	---	Terrace slope	5	Good	Good	Herbaceous	Undisturbed (exp forest)	IVB2
----	---	47.6	45.3	98	---	----	---	----	---	Upland flat	0	Good	Good	Herbaceous	Undisturbed (exp plot)	IIC1
0.56	74	34.0	30.8	100	0	32.0	100	0.32	97	Bottomland flat	0	Poor	Poor	Herbaceous	Grazed	IIC2
0.76	82	28.0	27.0	97	20	28.0	100	0.28	92	Terrace flat	1	Poor	Med-good	Herbaceous	Grazed	IIC1
0.34‡	53‡	20.5	19.0	94	---	----	---	----	---	Terrace slope	4	Good	Good	Herbaceous	Grazed	IIC2
----	---	44.0	38.4	96	---	----	---	----	---	Terrace flat	1	Good	Medium	Herbaceous	Grazed	IIC2
0.63	99	24.2	22.4	97	10	29.0	137	0.29	92	Bottomland flat	0	Poor	Poor	Bare	Undisturbed	II 1
----	---	34.0	27.4	100	---	----	---	----	---	Terrace flat	1	Poor	Poor	Herbaceous	Grazed	IIC2
0.48	54	24.4	24.2	97	30	24.6	104	0.21	92	Terrace flat	1	Poor	Poor	Herbaceous	Grazed	IIC1
----	---	25.5	22.5	97	---	----	---	----	---	Terrace flat	1	Med-good	Medium	Herbaceous	Undisturbed	IIC2
0.52‡	136‡	27.5	25.4	97	---	----	---	----	---	Terrace flat	1	Poor-med	Med-good	Herbaceous	Grazed	IIC1
0.65‡	136‡	28.4	24.6	96	---	----	---	----	---	Terrace flat	1	Medium	Poor	Herbaceous	Ball field	IIC2
0.56	90	28.7	24.3	96	---	31.0	138	0.14	97	Terrace flat	1-2	Medium	Med-good	Herbaceous	Grazed	IIC2
----	---	24.0	22.4	97	---	----	---	----	---	Terrace flat	1	Good	Medium	Herbaceous	Hay	IIC2
0.54‡	77‡	24.5	22.8	97	---	----	---	----	---	Terrace flat	1	Good	Medium	Herbaceous	Undisturbed	IIC2
0.71‡	120‡	30.4	25.7	97	---	----	---	----	---	Terrace flat	1	Medium	Med-good	Herbaceous	Hay	IIC2
----	---	30.1	24.5	94	---	----	---	----	---	Terrace flat	1	Medium	Poor	Herbaceous	Grazed	IIC2
----	---	29.4	24.2	95	---	----	---	----	---	Terrace flat	1	Medium	Medium	Herbaceous	Grazed	IIC2
0.47	70	25.5	24.4	97	0	28.4	131	0.37	91	Terrace flat	1	Medium	Poor	Herbaceous	Grazed	IIC2
0.59‡	63‡	42.2*	34.0	100*	0	40.7	139	0.51	87	Bottomland flat	0	Med-poor	Poor	Herbaceous	Grazed	IIG
0.61‡	63‡	36.0*	31.4	99*	0	33.2	142	0.42	91	Bottomland flat	0	Medium	Medium	Herbaceous	Grazed	IIG
0.57	70	33.4*	32.2	100*	0	35.4	140	0.42	93	Bottomland flat	0	Medium	Poor	Herbaceous	Hay	IIG
1.07‡	142‡	41.4	40.1	97	---	----	---	----	---	Upland flat	0-2	Medium	Medium	Herbaceous	Grazed	VB
----	---	41.2	37.6	97	---	----	---	----	---	Upland depression	0	Med-poor	Good	Herbaceous	Grazed	VB
0.59	76	34.4	29.0	97	---	----	---	----	---	Upland flat	0	Good	Good	Herbaceous	Grazed	IIIA2
----	---	36.1	29.2	98	---	----	---	----	---	Upland flat	0	Good	Good	Herbaceous	Cultivated	IIIA2
.45‡	63‡	34.-	29.-	98	---	----	---	----	---	Upland upper slope	4	Good	Good	Herbaceous	Undisturbed	IIIA1
.45‡	63‡	34.-	29.-	98	---	----	---	----	---	Upland upper slope	4	Good	Good	Wheat	Cultivated	IIIA2
----	---	34.-	29.-	98	---	----	---	----	---	Upland lower slope	4-8	Good	Good	Wheat	Cultivated	IIC1
----	---	34.-	29.-	98	---	----	---	----	---	Upland lower slope	4-8	Good	Good	Wheat	Cultivated	IIC1
----	---	34.-	29.-	98	---	----	---	----	---	Terrace flat	1	Good	Good	Herbaceous	Grazed	IIC1
1.2‡	22‡	34.-	29.-	98	---	----	---	----	---	Terrace flat	1	Poor-med	Good	Herbaceous	Undisturbed	IIC1
----	---	44.-	40.-	98	---	----	---	----	---	Upland flat	0-2	Good	Good	Herbaceous	Grazed	IIIA1
0.48‡	48‡	42.-	40.-	98	---	----	---	----	---	Terrace flat	1	Medium	Good	Alfalfa	Cultivated	IIC1
----	---	37.-	34.-	97	---	----	---	----	---	Terrace flat	1	Good	Good	Herbaceous	Grazed	IIC1
0.44‡	48‡	42.-	40.-	98	---	----	---	----	---	Terrace flat	1	Medium	Good	Alfalfa	Cultivated	IIC1
----	---	42.-	40.-	98	---	----	---	----	---	Terrace flat	1	Medium	Good	Alfalfa	Cultivated	IIC1
----	---	42.-	40.-	98	---	----	---	----	---	Terrace flat	1	Medium	Good	Alfalfa	Cultivated	IIC1
.44‡	63‡	42.-	40.-	98	---	----	---	----	---	Terrace flat	1	Medium	Poor	Herbaceous	Grazed	IIC1
----	---	37.-	34.-	97	---	----	---	----	---	Terrace flat	1	Good	Good	Alfalfa	Cultivated	IIC1
0.46	64	42.-	37.-	96	---	----	---	----	---	Bottomland flat	1	Medium	Poor	Herbaceous	Grazed	IIB
0.44‡	64‡	42.-	37.-	96	---	----	---	----	---	Bottomland flat	1	Medium	Poor	Herbaceous	Grazed	IIB1
0.44‡	63‡	42.-	37.-	97	---	----	---	----	---	Terrace flat	1	Good	Good	Herbaceous	Grazed	IIC1
0.43‡	57‡	42.-	40.-	98	---	----	---	----	---	Terrace flat	1	Medium	Good	Herbaceous	Grazed	IIC1
----	---	42.-	40.-	98	---	----	---	----	---	Terrace flat	1	Medium	Good	Alfalfa	Cultivated	IIC1
----	---	37.-	34.-	97	---	----	---	----	---	Terrace flat	1	Good	Good	Herbaceous	Undisturbed	IIC1
----	---	37.-	34.-	97	---	----	---	----	---	Terrace flat	1	Good	Good	Herbaceous	Grazed	IIC1
----	---	42.-	40.-	98	---	----	---	----	---	Terrace flat	1	Medium	Good	Herbaceous	Grazed	IIC1
----	---	42.-	40.-	98	---	----	---	----	---	Terrace flat	1	Poor-med	Good	Herbaceous	Grazed	IIIA2
----	---	37.-	34.-	97	---	----	---	----	---	Upland flat	1	Good	Good	Herbaceous	Hay	IIIA2
----	---	37.-	34.-	97	---	----	---	----	---	Upland flat	1	Good	Poor	Herbaceous	Undisturbed	IIH
----	---	37.-	34.-	97	---	----	---	----	---	Upland flat	1	Good	Poor	Herbaceous	Undisturbed	IIH
----	---	34.-	31.-	97	---	----	---	----	---	Upland flat	1	Good	Poor	Herbaceous	Grazed	IIC1
----	---	37.-	34.-	97	---	----	---	----	---	Terrace slope	4	Good	Good	Herbaceous	Cultivated	IIC1
----	---	32.-	29.-	97	---	----	---	----	---	Terrace slope	4	Good	Good	Alfalfa	Hay	IIC1
.37 ††	.31 ††	34.-	31.-	97	---	----	---	----	---	Terrace flat	1	Med-good	Poor	Herbaceous	Grazed	IIC1
----	---	42.-	37.-	96	---	----	---	----	---	Terrace flat	1	Good	Good	Herbaceous	Grazed	IIC1
----	---	47.-	42.-	97	---	----	---	----	---	Bottomland flat	1	Medium	Good	Herbaceous	Grazed	IIC1
----	---	42.-	37.-	96	---	----	---	----	---	Upland upper slope	2	Good	Medium	Herbaceous	Grazed	IIB1
0.47	74	34.-	34.-	97	---	34.-	107	0.34	94	Bottomland flat	1	Medium	Good	Herbaceous	Undisturbed	IIC1
----	---	42.-	37.-	97	---	----	---	----	---	Terrace flat	1	Good	Good	Herbaceous		

(Continued)

(6 to 7 sheets)

Table B4

Soil Data, 6- to 12-in. Layer

Site No.	Location State	Location County or Parish	USDA Soil Map Identification Soil Series	0- to 6-in. USDA Type	Topography Class	USDA Type	USDA Texture by Wt, % Sand	Silt	Clay	USCS % Fines	USCS Atterberg Limits LL	PL	PI	USCS Type	Organic Cont %	Dry Density lb/cu ft	Wet-Season Condition Average MC, %	CI	RI	RCI	MC, % at Atmos Tension 0	0.06	% Sat. at 0 Atmos Tension	High-Moisture Condition At Lowest RCI Depth to Water Table, in.	MC %	CI	RI
																								Intermountain Region (Continued)			
62	Idaho	Gooding	Gooding	LS	High	S	97	1	2	8	23	--	NP	SP-SM	0.32	94.9††	6.6††	250†	1.12††	281††	25.8	10.1	92	---	----	---	----
63		Gooding	Portneuf	L	High	SiL	35	50	15	87	28	19	9	CL	0.78	90.5	----	---	----	---	29.3	25.4	94	---	----	---	----
64		Gooding	Portneuf	L	High	SiL	42	50	8	79	22	21	1	ML	0.70	86.2	----	---	----	---	35.7	31.0	103	---	----	---	----
65		Gooding	Minidoka	L	High	L	47	45	8	80	28	21	7	CL-ML	1.25	89.9	----	---	----	---	30.5	26.7	96	---	----	---	----
66		Gooding	Portneuf	SiL	High	SiL	35	51	14	88	26	18	8	CL	0.70	86.2	----	---	----	---	33.9	26.1	98	---	----	---	----
67		Elmore	Chilcott	SiL	High	SiL	20	57	23	93	47	24	23	CL	1.55	79.9	----	---	----	---	39.2	31.5	97	---	----	---	----
68		Elmore	Power	SiL	High	SiL	27	53	20	87	35	20	15	CL	1.55	82.4	----	---	----	---	38.8	29.0	102	---	----	---	----
69		Elmore	Unclassified	L	High	L	50	42	8	63	26	20	6	CL-ML	1.15	87.4	----	---	----	---	30.8	25.2	92	---	----	---	----
70		Boise	Kilmerque	SL	Low	SL	56	32	12	52	16	14	2	ML	1.05	111.7	19.8†	174†	0.30†	52†	16.2*	14.7	90*	---	19.8	174	0.30
71		Boise	Moscow	SL	High	SL	75	18	7	31	15	--	NP	SM	0.38	103.6	----	---	----	---	21.0	12.4	93	---	----	---	----
72		Boise	Sweet	SL	High	SL	60	29	11	46	28	20	8	SC	1.45	97.4	16.3	108	0.88	112	23.9	17.9	91	---	----	---	----
73		Boise	Sweet	L	High	SL	57	32	11	50	23	15	8	CL	2.47	96.1	18.3	97	0.62	65	25.2	20.0	92	---	----	---	----
74		Ada	Unclassified	SiL	High	SiL	19	71	10	93	39	27	12	ML	2.60	67.4	----	---	----	---	51.4	44.6	94	---	----	---	----
75		Ada	Chilcott	SiL	High	SiL	19	70	11	94	28	20	8	CL	0.95	88.0	----	---	----	---	31.4	27.8	95	---	----	---	----
76		Ada	Falk	SiL	Low	SiL	35	53	12	78	25	20	5	CL-ML	1.33	94.9	25.0	134	0.40	54	27.0	24.6	96	36	25.0	144	0.34
77		Valley	Unclassified	SL	Low	SL	69	26	5	35	28	--	NP	SM	2.08	72.4	39.0	169	0.37	65	44.9	39.6	93	11	40.7	148	0.30
78		Jerome	Portneuf	SL	Low	SL	67	23	10	47	21	17	4	SM-SC	0.86	108.0	----	---	----	---	18.5	16.6	92	---	----	---	----
79		Jerome	Portneuf	SL	High	SCL	65	25	10	58	22	19	3	ML	0.55	104.9	----	---	----	---	21.0	18.9	97	---	----	---	----
80		Jerome	Portneuf	SiL	High	SiL	32	58	10	92	25	20	5	CL-ML	0.70	97.4	----	---	----	---	26.3	24.1	100	---	----	---	----
81		Jerome	Minidoka	SiL	High	SiL	26	60	14	92	29	20	9	CL	1.55	81.8	17.2†	300†	0.78†	234†	34.9	27.5	90	---	----	---	----
82		Jerome	Portneuf	SiL	High	SiL	16	72	12	96	33	21	12	CL	1.98	90.5	----	---	----	---	30.9	29.3	99	---	----	---	----
83		Minidoka	Paul	SiL	High	SiL	29	51	20	84	32	17	15	CL	1.25	97.4	----	---	----	---	25.0	22.9	95	---	----	---	----
84		Minidoka	Rupert	SL	High	SL	67	26	7	42	15	13	2	SM	0.78	103.5	----	---	----	---	19.9	14.8	93	---	----	---	----
85		Minidoka	Paul	S	High	S	93	3	4	8	21	--	NP	SP-SM	0.25	98.0	5.9	256	1.33	300+	22.5	9.4	99	---	----	---	----
86		Cassia	Goose Creek	SiL	High	SiL	30	55	15	83	38	24	14	CL	2.47	76.2	----	---	----	---	41.8	34.5	95	---	----	---	----
87		Cassia	Plew	SL	High	SL	65	28	7	46	22	--	NP	SM	0.78	85.5	----	---	----	---	26.4	21.9	80	---	----	---	----
88		Valley	Moscow	SL	High	SL	68	25	7	39	18	--	NP	SM	0.62	94.9	----	---	----	---	26.9	17.0	96	---	----	---	----
89		Valley	Unclassified	L	High	L	36	49	15	73	36	22	14	CL	3.69	77.4	35.8†	84†	0.27†	23†	40.2	35.8	94	---	----	---	----
90		Valley	Unclassified	SiL	High	SiL	22	60	18	85	40	28	12	ML	4.05	71.8	36.0†	88†	0.66†	58†	47.9	40.0	97	---	----	---	----
91		Adams	Unclassified	SiL	High	SiL	37	52	11	72	36	27	9	ML	3.54	81.2	31.7†	102†	0.70†	71†	40.6	35.8	102	---	----	---	----
92		Cassia	Unclassified	SiL	High	SiL	16	68	16	92	42	25	17	CL	3.69	67.4	----	---	----	---	53.9	38.0	97	---	----	---	----
93		Cassia	Unclassified	SiL	High	SiCL	13	60	27	91	55	32	23	MH	3.41	62.4	----	---	----	---	59.7	40.8	96	---	----	---	----
94	Utah	Sanpete	Unclassified	SiL	Low	SiCL	20	52	28	89	56	26	30	CH	4.05	81.8	----	---	----	---	39.7	38.4	101	---	----	---	----
95		Sanpete	Unclassified	L	Low	CL	28	49	23	86	54	32	22	MH	5.86	76.2	34.3†	149†	0.76†	113†	42.6	41.2	96	---	----	---	----
96		Sanpete	Unclassified	CL	High	CL	23	47	30	84	47	23	26	CL	3.62	88.1	----	---	----	---	31.8	30.9	96	---	----	---	----
97		Sanpete	Unclassified	SiL	High	L	30	48	22	81	36	18	18	CL	1.45	92.4	----	---	----	---	27.4	22.0	92	---	----	---	----
98		Sanpete	Unclassified	CL	Low	CL	23	45	32	85	52	23	27	CL	2.75	90.2	33.9†	81†	0.45†	36†	34.4*	33.6	99*	<15	39.9	81	0.45
99		Sanpete	Billings	SiCL	High	SiCL	16	51	33	92	53	19	34	CL	1.65	93.5	----	---	----	---	26.2	22.4	95	---	----	---	----
100		Sevier	Redfield	SiCL	Low	SiCL	13	47	40	92	42	21	17	CL	1.45	85.3†,††	32.9†,††	92†,††	0.59†,††	54†,††	35.5	33.8	101	23	32.9	92	0.59
101		Sevier	Redfield	CL	Low	CL	20	45	35	81	55	24	34	CH	1.45	88.8††	31.1††	134††	0.87††	117††	33.2	33.0	95	30	32.8	111	0.86
102		Sevier	Palisade	SL	High	SL	58	34	28	53	34	17	17	CL	1.15	96.8	----	---	----	---	31.0	27.9	90	---	----	---	----
103		Pilot	Unclassified	L	Low	L	34	46	20	79	54	40	25	CH	2.35	72.4††	46.1††	84††	0.77††	67††	49.7	47.4	101	11	51.3	66	0.68
104		Pilot	Mashin	SL	High	SL	56	33	11	55	24	23	1	CL-ML	0.55	102.4	----	---	----	---	23.9	22.0	103	---	----	---	----
105		Garfield	Redfield	CL	High	L	34	34	32	68	37	18	19	CL	1.77	95.3	----	---	----	---	26.6	25.9	95	---	----	---	----
106		Washington	Redfield	L	Low	L	43	33	24	68	33	18	15	CL	1.05	103.6††	19.6††	151††	0.94††	142††	20.2	19.4	90	0	20.3	117	0.76
107		Washington	Redfield	L	High	L	43	37	20	63	31	15	16	CL	1.55	98.0	----	---	----	---	23.5	19.7	91	---	----	---	----
108		Washington	LaVerkin	SiCL	Low	CL	33	30	37	79	33	16	17	CL	1.25	91.1††	27.1†††	174†††	0.85†††	149†††	30.2	27.0	96	---	----	---	----
109		Washington	Redfield	FL	Low	L	47	40	13	72	24	17	11	CL	1.25	101.1††	24.2†††	124††	0.4.††	50††	22.2	21.7	105	15	24.6	111	0.38
110		Washington	Bravton	LS	High	LS	92	4	4	8	17	--	NP	SM	0.55	97.4	----	---	----	---	24.6	20.1	93	---	----	---	----
111		Washington	Silt	SiL	Low	SiL	7	69	24	93	32	--	NP	SM	0.77	92.8	----	---	----	---	25.8	21.0	95	---	----	---	----
112		Washington	Vint	L	Low	SL	75	19	6	31	18	--	NP	SM	0.48	98.1	----	---	----	---	25.1	22.3	97	---	----	---	----
113		Washington	Saint George	SL	High	S	94	4	2	6	17	--	NP	SM	0.33	104.1††	4.1††	1.7†††	1.77†††	3.1†††	27.0	13.2	91	---	----	---	----
114		Washington	Tiger	S	High	S	94	4	2	6	14	--	NP	SM	0.18	104.3	----	---	----	---	20.3	11.6	95	---	----	---	----
115		Washington	Motoqua	SL	High	SL	70	23	7	44	23	--	NP	SM	0.62	93.4	----	---	----	---	27.7	25.7	96	---	----	---	----
116		Washington	Pintura	L	Low	L	48	34	18	71	34	17	17	CL	1.35	94.1	----	---	----	---	26.4	23.2	94	---	----	---	----
117		Washington	Pintura	SL	High	SL	67	23	10	48	24	--	NP	SM	0.48	96.8	----	---	----	---	24.6	21.0	92	---	----	---	----
118		Iron	Unclassified	SiL	High	SiL	24	61	15	90	41	24	17	ML	1.25	87.4	----	---	----	---	42.4	43.7	95	---	----	---	----
119		Iron	Unclassified	SiL	High	SiL	21	64	15	90	39	24	15	CL	1.48	93.7	----	---	----	---	45.5	39.2	98	---	----	---	----
120		Iron	Unclassified	SiL	High	SiL	21	54	25	91	34	21	13	CL	1.48	101.4	----	---	----	---	22.4	19.9	100	---	----	---	----
121		Iron	Maybird	SL	High	SL	71	24	5	41	19	--	NP	SM	0.70	96.8	----	---	----	---	31.0	23.6	97	---	----	---	----
122		Beaver	Matoqua	SL	High	SL	71	24	5	41	19	--	NP	SM	0.70	96.8	----	---	----	---	31.0	23.6	97	---	----	---	----
123		Beaver	Mars	L	High	SCL	27	44	29	73	43	17	26	CL-ML	1.33	94.1††	24.1†††	147†††	0.71†††	104†††	31.0	23.8	96	---	----	---	----
124		Beaver	Unclassified	SiCL	Low	SiCL	13	53	34	93	47	22	25	CL	1.33	97.4††	24.1†††	147†††	0.71†††	104†††	28.0	23.0	93	---	----	---	----
125		Beaver	Matoqua	SL	High	SL	70	24	6	41	19	--	NP	SM	0.70	96.8	----	---	----	---	34.6	33.4	91	---	----	---	----
126		Millard	Unclassified	SL	High	SL	70	24	6	41	19	--	NP	SM	0.70	96.8	----	---	----	---	24.6	17.2	93	---	----	---	----
127		Millard	Unclassified	SL	High	SL	70	24	6	41	19	--	NP	SM	0.70	96.8††	.7†††	1.7†††	1.14†††	1.34†††	27.1	12.6	90	---	----	---	----
128		Millard	Unclassified	SL	High	SL	70	24	6	41	19	--	NP	SM	0.70	96.8††	----	---	----	---	26.6	21.2	90	---	----	---	----
129		Millard	Unclassified	SiCL	High	SiCL	13	54	33	93	54	24	30	ML	1.48	78.	----	---	----	---	43.4	33.0	102	---	----	---	----
130		Millard	Unclassified	SL	High	SL	72	23	5	41	21	--	NP	SM	0.55	96.1††	----	---	----	---	34.0	23.0	95	---	----	---	----
131		Millard	Unclassified	SL	High	SL	72	23	5	41	21	--	NP	SM	0.55	97.4	----	---	----	---	25.4	16.9	95	---	----	---	----
132	Nev.	White Pine	Unclassified	SL	High	SL	72	23	5	41	21	--	NP	SM	..	97.4	----	---	----	---	25.8	19.6	98	---	----	---	----
133		White Pine	Unclassified	SiCL	High	SiCL	34	44	22	75	41	21	20	CL	..	94.4	14.1†	263†	1.12†	135†	38.7	33.2	95	---	----	---	----
134		White Pine	Unclassified	SiCL	Low	SiCL	13	52	35	87	46	22	24	ML	..	94.4	24.3†	144†	0.93†	84†	43.7	41.1	101*	9	48.3*	163	0.38
135		White Pine	Unclassified	L	High	L	44	37	19	71	32	17	15	CL	..	94.4	----	---	----	---	37.1	27.4	91	---	----	---	----
136		Elko	Unclassified	L	High	CL	40	37	23	60	44	22	22	CL	..	92.4	----	---	----	---	34.1	22.2	89	---	----	---	----
137		Elko	Unclassified	L	High	L	44	42	14	56	30	17	13	CL	..	96.4	----	---	----	---	34.1	27.6	97	---	----	---	----
138		Elko	Unclassified	SL	High	SL	54	34	12	46	24	17	7	SC	..	98.4	----	---	----	---	27.9	23.6	93	---	----	---	----
139		Elko	Unclassified	SiCL	High	SiCL	20	52	28	80	48	25	23	ML	..	87.4	----	---	----	---	52.5	44.5	94	---	----	---	----
140		Elko	Unclassified	SiCL	High	L	34	43	23	66	36	21	15	ML	1.77	.1.8	----	---	----	---	22.4	17.4	95	---	----	---	----
141	Utah	Tooele	Settler	SiL	Low	CL	42	37	21	58	31	19	12	CL	1.48	95.1††	24.4†,††	300†,††	0.93†,††	169†,††	29.4	28.1	106	0	24.9	300	0.55
142		Tooele	Settler	SiCL	Low	CL	20	48	32	92	54	21	33	CL	1.33	89.1	----	---	----	---	28.8	25.6	105	---	----	---	----
143		Tooele	Settler	SiCL	Low	SiCL	24	52	24	77	45	21	24	CL-ML	1.05	93.7††	31.3†,††	43†,††	0.65†,††	28†,††	37.6	37.1	102	<20	38.3	139	0.65
144		Tooele	Settler	SiCL	Low	SiCL	4	51	34	77	38	21	15	CL	1.33	81.2*	43.0††	120††	0.41††	52††	38.6*	38.3	98*	25	44.1	128	0.38
145		Tooele	Settler	SiL	High	L	29	43	28	70	31	15	16	CL	1.77	93.6	----	---	----	---	26.2	19.2	91	---	----	---	----

* Questionable value, not used in analysis.
†† Data from site in arid area, not used in analysis.
† Single site reading.
†† Data from high-water-table site in arid area, used in analysis.

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Table B4 (Concluded)

Condition		MC, % at Atmos Tension		% Sat. at 0 Atmos Tension	High-Moisture Condition At Lowest RCI					Site Environmental Data						
					Depth to Water Table, In.	MC %	CI	RI	Lowest RCI	Topographic Position	Slope %	Drainage Surface	Drainage Internal	Vegetation	Land Use	Eng. Conf. Land Form
RI	RCI	0	0.06													
Intermountain Region (Continued)																
12††	28††	25.6	10.1	92	---	----	---	----	---	Terrace flat	1	Good	Good	Herbaceous	Grazed	IIC1
--	---	29.3	25.4	94	---	----	---	----	---	Upland flat	2	Good	Good	Herbaceous	Grazed	IIIA2
--	---	35.7	31.0	103	---	----	---	----	---	Upland flat	1	Good	Good	Herbaceous	Grazed	IIIA2
--	---	30.5	26.7	96	---	----	---	----	---	Upland depression	1	Good	Good	Herbaceous	Grazed	IIIA2
--	---	33.9	26.1	98	---	----	---	----	---	Upland upper slope	2	Good	Good	Herbaceous	Grazed	IIIA2
--	---	39.2	31.5	97	---	----	---	----	---	Upland flat	1	Good	Poor	Herbaceous	Undisturbed	IIC1
--	---	38.8	29.0	102	---	----	---	----	---	Terrace flat	1	Good	Med-good	Herbaceous	Grazed	IIC1
--	---	30.8	25.2	92	---	----	---	----	---	Terrace flat	1	Good	Good	Herbaceous	Grazed	IIC1
10†	52†	16.2*	14.7	90*	---	19.8	174	0.30	52	Upland ridge	10	Good	Good	Ponderosa pine and snowberry, herbaceous	Undisturbed	IVB3
--	---	21.0	12.4	93	---	----	---	----	---	Upland upper slope	30	Good	Good	Herbaceous with some trees	Undisturbed	IVB3
98	112	23.9	17.9	91	---	----	---	----	---	Upland lower slope	12	Good	Poor	Herbaceous	Undisturbed	IID
96	65	25.2	20.0	92	---	----	---	----	---	Upland lower slope	10	Good	Poor	Herbaceous	Undisturbed	IID
--	---	51.4	44.6	94	---	----	---	----	---	Terrace flat	1	Good	Good	Herbaceous	Grazed	IIC1
--	---	31.4	27.8	95	---	----	---	----	---	Upland flat	1-3	Good	Poor	Herbaceous	Grazed	IIC1
50	54	27.0	24.6	96	36	25.0	144	0.34	49	Bottomland flat	1	Medium	Good	Herbaceous	Grazed	IIC1
97	65	44.9	39.6	93	11	40.7	148	0.30	44	Bottomland flat	1	Medium	Good	Herbaceous	Grazed	IIB1
--	---	18.5	16.6	92	---	----	---	----	---	Upland depression	1	Medium	Good	Herbaceous	Grazed	IIIB
--	---	21.0	18.9	97	---	----	---	----	---	Upland upper slope	3	Good	Good	Alfalfa	Cultivated	IIIB
--	---	26.3	24.1	100	---	----	---	----	---	Upland flat	1	Good	Good	Oats, barley, and wheat	Cultivated	IIIA2
28†	23††	34.9	27.5	90	---	----	---	----	---	Upland lower slope	1	Good	Good	Wheat	Cultivated	IIIA2
--	---	30.9	24.3	99	---	----	---	----	---	Upland lower slope	2	Good	Good	Herbaceous	Grazed	IIIA1
--	---	25.0	22.9	95	---	----	---	----	---	Terrace flat	1	Medium	Medium	Herbaceous	Grazed	IIC1
--	---	19.9	14.8	93	---	----	---	----	---	Terrace flat	1	Medium	Good	Alfalfa	Cultivated	IIC1
3	300†	22.5	7.4	99	---	----	---	----	---	Terrace slope	4	Poor	Poor	Herbaceous	Undisturbed	IIC1
--	---	41.6	34.1	95	---	----	---	----	---	Terrace flat	1	Good	Good	Herbaceous	Undisturbed	IIC1
--	---	28.4	21.9	80	---	----	---	----	---	Terrace flat	1	Good	Good	Herbaceous	Grazed	IIC1
--	---	26.9	17.5	96	---	----	---	----	---	Upland upper slope	30	Good	Good	Pine forest	Undisturbed	IVB3
7†	23†	40.2	35.5	94	---	----	---	----	---	Terrace slope	1-5	Good	Good	Herbaceous	Grazed	IIC1
56	58†	47.4	40.0	97	---	----	---	----	---	Upland flat	1	Good	Good	Herbaceous with some trees	Grazed	IVB1
0†	71†	40.0	34.8	102	---	----	---	----	---	Upland lower slope	15	Good	Good	Herbaceous with some trees	Grazed	IVB1
--	---	53.0	38.0	97	---	----	---	----	---	Terrace flat	1	Med-good	Good	Herbaceous	Grazed	IIC1
--	---	59.7	40.8	96	---	----	---	----	---	Terrace flat	1	Good	Good	Herbaceous	Grazed	IIC1
--	---	39.7	35.4	101	---	----	---	----	---	Upland lower slope	2	Good	Good	Herbaceous	Experimental forest	IIB1
6†	113†	42.6	41.2	98	---	----	---	----	---	Upland lower slope	5	Good	Good	Aspen and snowberry, brush understory	Undisturbed	IVA1
--	---	31.8	30.9	96	---	----	---	----	---	Upland lower slope	7	Good	Good	Oak and snowberry, brush understory	Grazed	IVA1
--	---	27.4	22.1	92	---	----	---	----	---	Terrace slope	5	Good	Medium	Herbaceous	Grazed	IIC1
5†	36†	34.4*	33.6	93*	<15	39.9	81	0.49	36	Bottomland flat	1	Poor	Poor	Herbaceous	Grazed	IIC1
--	---	26.2	22.4	95	---	----	---	----	---	Terrace flat	1	Med-good	Good	Alfalfa	Experimental plot	IIC1
9†,††	54†,††	35.5	33.8	101	23	38.9	92	0.59	74	Bottomland flat	1	Medium	Poor	Herbaceous	Grazed	IIC1
7††	117††	33.2	33.0	95	5	52.0	111	0.66	87	Bottomland flat	1	Medium	Medium	Herbaceous	Grazed	IIC1
--	---	31.0	27.9	92	---	----	---	----	---	Terrace slope	1-5	Good	Good	Herbaceous	Grazed	IIC1
7††	67††	49.7	47.4	101	12	54.3	66	0.68	45	Bottomland flat	1	Poor	Poor	Herbaceous	Grazed	IIC1
--	---	23.9	22.0	103	---	----	---	----	---	Terrace flat	1	Medium	Good	Alfalfa	Cultivated	IIC1
--	---	26.6	25.9	95	---	----	---	----	---	Terrace flat	1	Poor	Poor	Herbaceous	Grazed	IIC1
4††	14†††	20.2	19.4	96	6	24.5	117	0.78	91	Terrace slope	5--	Medium	Good	Herbaceous	Hay	IIC1
--	---	23.0	19.7	91	---	----	---	----	---	Terrace flat	1	Medium	Good	Herbaceous	Grazed	IIC1
8†††	149†††	30.2	27.0	96	---	----	---	----	---	Upland lower slope	2-5	Good	Poor	Fruit trees, herbaceous understory	Undisturbed	IIC1
0††	58††	22.2	21.7	103	29	34.6	111	0.38	42	Upland lower slope	2-5	Good	Poor	Herbaceous	Grazed	IIC1
--	---	24.8	20.1	93	---	----	---	----	---	Upland lower slope	1-2	Good	Good-med	Herbaceous	Grazed	IIH
--	---	28.8	21.[illegible]	96	---	----	---	----	---	Terrace flat	1	Medium	Good	Herbaceous with some trees	Grazed	IIB1
--	---	25.4	22.3	97	---	----	---	----	---	Terrace flat	1	Med-poor	Poor	Herbaceous	Grazed	IIB1
1†††	39†-†††	27.6	13.2	91	---	----	---	----	---	Upland lower slope	4	Good	Good	Herbaceous	Grazed	IID
--	---	20.5	11.0	95	---	----	---	----	---	Upland lower slope	3	Good	Good	Herbaceous	Grazed	IID
--	---	27.7	25.7	98	---	----	---	----	---	Terrace flat	1	Med-good	Poor-med	Herbaceous	Grazed	IIC1
--	---	26.4	23.2	94	---	----	---	----	---	Terrace flat	1	Good	Good	Herbaceous	Grazed	IIC1
--	---	24.8	22.[illegible]	92	---	----	---	----	---	Terrace flat	1	Good	Good	Herbaceous	Undisturbed	IIC1
--	---	52.4	43.7	97	---	----	---	----	---	Upland lower slope	1	Medium	Good	Herbaceous	Undisturbed	IIF
--	---	49.5	37.2	93	---	----	---	----	---	Upland flat	1	Good	Good	Herbaceous	Grazed	IIF
--	---	21.4	14.4	100	---	----	---	----	---	Upland flat	1	Good	Good	Herbaceous	Grazed	IIH
--	---	31.0	23.0	97	---	----	---	----	---	Upland flat	1	Good	Good	Herbaceous	Grazed	IIH
1†††	39††††	31.2	25.0	96	---	----	---	----	---	Terrace flat	1	Poor	Poor	Herbaceous	Grazed	IIC1
1††	37††††	28.1	23.1	95	---	----	---	----	---	Terrace flat	1	Good	Good	Alfalfa	Cultivated	IIC1
--	---	34.6	33.4	94	---	----	---	----	---	Bottomland flat	1	Medium	Poor-med	Herbaceous	Grazed	IIC1
--	---	24.6	17.2	95	---	----	---	----	---	Upland upper slope	3	Good	Good	Herbaceous	Grazed	IIH
7†††	23††††	24.[illegible]	18.[illegible]	97	---	----	---	----	---	Upland flat	1	Good	Good	Herbaceous	Grazed	IIH
--	---	25.6	21.6	96	---	----	---	----	---	Upland lower slope	1	Good	Good	Herbaceous	Undisturbed	IIH
--	---	43.4	33.[illegible]	102	---	----	---	----	---	Upland depressional	1	Poor	Poor	Bare	Bare	II I
--	---	34.[illegible]	23.[illegible]	97	---	----	---	----	---	Terrace flat	1	Good	Good	Herbaceous	Grazed	IIC1
--	---	23.[illegible]	16.[illegible]	95	---	----	---	----	---	Upland lower slope	1	Good	Good	Herbaceous	Grazed	IIH
--	---	25.8	17.[illegible]	95	---	----	---	----	---	Upland lower slope	1	Good	Good	Herbaceous	Grazed	IIH
1	138†	38.7	33.6	96	---	----	---	----	---	Upland lower slope	1	Good	Good	Herbaceous	Grazed	IID
9	91	43.7	42.[illegible]	102*	9	46.9*	183	0.38	82	Bottomland flat	1	Poor	Poor	Herbaceous	Grazed	II I
9	94†	37.[illegible]	29.4	95	---	----	---	----	---	Upland lower slope	3	Good	Good	Herbaceous	Grazed	IIH
--	---	34.[illegible]	22.[illegible]	92	---	----	---	----	---	Upland lower slope	1	Good	Good	Herbaceous	Grazed	IIH
--	---	30.[illegible]	27.[illegible]	97	---	----	---	----	---	Upland lower slope	1	Good	Good	Herbaceous	Grazed	IID
--	---	27.[illegible]	23.[illegible]	93	---	----	---	----	---	Upland lower slope	1	Medium	Good	Herbaceous	Grazed	IID
--	---	28.[illegible]	19.[illegible]	94	---	----	---	----	---	Upland lower slope	1	Good	Good	Herbaceous	Grazed	IVB1
--	---	54.[illegible]	44.[illegible]	98	---	----	---	----	---	Bottomland flat	1	Med-poor	Good	Herbaceous	Grazed	IIC1
--	---	22.4	17.4	93	---	----	---	----	---	Upland lower slope	4	Good	Good	Herbaceous	Grazed	IIH
5,††	16†,††	27.4	25.2	100	0	28.1	54	0.31	28	Bottomland flat	1	Poor	Poor	Bare	Bare	IIG
--	---	28.8	21.6	103	---	----	---	----	---	Bottomland flat	1	Poor	Poor	Bare	Bare	IIG
5,††	8†,††	37.6	37.2	102	12	38.3	43	0.45	21	Bottomland flat	1	Poor	Poor	Bare	Bare	IIG
1†	52††	38.6*	38.3	95*	18	44.2	126	0.38	47	Bottomland flat	1	Poor	Poor	Bare	Bare	IIG
--	---	26.2	19.2	91	---	----	---	----	---	Bottomland flat	1	Medium	Good	Herbaceous	Undisturbed	IIH

Table B1

Air Photo-Trafficability Site Data

Area No.	Site No.	Location: State	Location: County or Parish	USDA Soil Map Identification: Soil Series or Association	USDA Soil Map Identification: Type	0- to 6-in. USDA Type	Topography Class	Soil Data, 6- to 12-in. Layer: USDA Texture by Wt. %: Type	Sand	Silt	Clay	USCS: % Finer	Atterberg Limits: LL	PL	PI	USCS: Type	Dry Density lb/cu ft	Wet-Season Condition: MC, %	% Sat.	Depth to Water Table in.	CI	RI	RSI	Low-Topography Site at High-Moisture Condition
2	H	Ala.	Blount	Hartselle-Muskingum	----	----	High	----	--	--	--	66	21	8	13	CL	102	15.0	64	---	168	1.10	185	-
4 (5)	L		Jefferson	Hartselle-Muskingum	----	----	Low	----	--	--	--	84	33	19	14	CL	102	15.0	64	---	122	0.50	61	-
5 (6)	L		Jefferson	Hartselle-Muskingum	----	----	Low	----	--	--	--	65	36	26	9	ML	100	17.0	85	---	172	0.62	107	-
5 (6)	H		Jefferson	Hartselle-Muskingum	----	----	High	----	--	--	--	40	23	19	4	SM-SC	102	16.0	68	---	170	1.03	176	-
6 (7)	H		Talladega	Decatur-Dewey-Clarksville	----	----	High	----	--	--	--	71	31	17	14	CL	104	16.0	93	---	212	0.70	148	-
6 (7)	L		Talladega	Decatur-Dewey-Clarksville	----	----	Low	----	--	--	--	69	29	16	13	CL	104	17.0	96	---	166	0.45	72	-
8 (9)	H		Talladega	Fannin	----	----	High	----	--	--	--	93	28	19	9	CL	99	17.0	87	---	192	0.20	20	-
8 (9)	L		Talladega	Fannin	----	----	Low	----	--	--	--	83	35	19	16	ML	96	----	---	---	181	0.72	130	-
1 (31)	A-1	Ark.	Pulaski	Conway	----	L	High	L	49	32	19	--	31	19	12	CL	---	----	---	---	---	----	---	-
1 (31)	A-2		Pulaski	Conway	----	SIL	Low	SIL	27	54	19	--	30	20	10	CL	---	----	---	---	---	----	---	-
1 (31)	B-1		Pulaski	Conway	----	SIL	Low	SIL	33	51	16	--	25	20	5	ML	---	----	---	---	---	----	---	-
2	1	Calif.	San Joaquin	---	----	SIL	Low	SIL	30	55	15	--	30	18	12	CL	126.9*	18.9	---	---	71	0.72	51	X
2	2		San Joaquin	---	----	SIC	Low	SIC	12	41	47	--	44	21	23	CL	124.5	24.9	90	---	65	0.59	38	X
2	4		San Joaquin	---	----	SL	Low	SL	--	--	--	46	20	14	6	SM-SC	122.5*	25.0	---	---	155	0.61	94	X
3	1		Merced	---	----	C	Low	C	33	25	42	--	70	32	38	CH	91.0*	35.0*	---	---	83	1.28	106	X
3	2		Merced	---	----	SL	Low	SL	53	32	15	--	33	22	13	CL	99.1	23.3	94	---	97	0.62	60	-
3	3		Merced	---	----	SL	Low	SL	--	--	--	41	23	15	8	SC	110.7	15.5	135*	---	84	0.79	66	-
4	1		Kings	---	----	L	Low	L	44	31	25	--	41	21	20	CL	77.4††	38.4††	90	---	42††	0.45††	19††	X
4	2		Kings	---	----	LS	Low	LS	--	--	--	24	--	--	NP	SM	105.5††	20.9††	97	---	15††	0.84††	13††	X
5	1		Fresno	---	----	L	Low	L	40	31	29	--	39	18	21	CL	---	----	---	---	---	----	---	-
5	2		Fresno	---	----	SL	Low	SL	--	--	--	38	24	18	6	SM-SC	87.3	16.2	54	---	215	1.00	215	-
5	3		Fresno	---	----	SL	Low	SL	--	--	--	47	43	28	15	SM	---	----	---	---	---	----	---	-
6	1		San Luis Obispo	---	----	C	Low	C	9	27	74	--	97	28	69	CH	90.	54.3	105	---	129	0.86	85	X
7	1		Kern	---	----	LS	Low	LS	--	--	--	27	--	--	NP	SM	---	----	---	---	---	----	---	-
8	1		Kern	---	----	S	Low	S	--	--	--	12	--	--	NP	SP-SM	99.3††	18.3††	4	---	25††	1.97††	254††	-
8	2		Kern	---	----	SL	Low	SL	--	--	--	41	--	--	NP	SM	84.1††	19.4††	45	---	26††	1.58††	270††	-
8	3		Kern	---	----	CL	Low	CL	22	40	38	--	50	32	18	OH	75.1††	41.6††	231	---	9††	0.82††	47††	X
8	4		Kern	---	----	SL	Low	SL	--	39	--	--	30	20	10	CL	84.1††	17.7††	54	---	214††	1.04††	223††	-
9	1		Kern	---	----	SL	Low	SL	63	25	12	--	43	21	11	SC	---	----	---	---	---	----	---	-
9	2		Kern	---	----	L	Low	L	40	37	24	--	39	20	19	CL	98.6	----	---	---	---	----	---	-
9	3		Kern	---	----	SIL	Low	SIL	28	51	21	--	34	19	15	CL	107.1††	21.3††	96	---	7††	0.82††	14††	-
9	4		Kern	---	----	C	Low	C	20	35	43	--	77	42	35	OH	76.1††	49.1††	---	---	242*	1.09††	242††	-
10	1		Los Angeles	---	----	LS	Low	LS	--	--	--	14	--	--	NP	SM	---	----	---	---	---	----	---	-
10	2		Los Angeles	---	----	SL	Low	SL	72	22	--	--	31	--	--	NP	SM	---	----	---	---	----	---	-
10	3		Los Angeles	---	----	SIL	Low	SIL	23	54	23	--	21	14	7	ML	94.7††	29.4††	71	---	29††	1.06††	256††	-
6	L	Ga.	DeKalb	Cecil-Appling	----	----	High	----	--	--	--	13	--	--	NP	SM	104	14	62	---	216	0.72	155	-
7	H		Floyd	Decatur-Dewey-Clarksville	----	----	High	----	--	--	--	36	21	19	2	CM	104	16	94	---	157	0.75	118	-
7	L		Floyd	Decatur-Dewey-Clarksville	----	----	Low	----	--	--	--	42	26	17	9	CL	113	13	91	---	226	0.87	197	-
8	H		Floyd	Decatur-Dewey-Clarksville	----	----	High	----	--	--	--	64	26	15	11	CL	112	14	97	---	232	0.85	197	-
1 (29A)	1	Ill.	Iroquois	---	----	SL	Low	SL	48	40	12	--	40	27	13	OL	---	----	---	---	---	----	---	-
1 (29A)	2		Iroquois	---	----	L	Low	L	32	43	25	--	54	43	29	CH	---	----	---	---	---	----	---	-
1 (29A)	3		Iroquois	---	----	SIL	Low	SIL	32	53	15	--	43	28	15	CL	---	----	---	---	---	----	---	-
2 (29B)	1-1		Champaign	---	----	SIL	Low	SIL	25	53	22	--	54	27	27	OH	---	----	---	---	---	----	---	-
2 (29B)	1-2		Champaign	---	----	SIC	Low	SIC	20	47	33	--	58	28	30	MH	---	----	---	---	---	----	---	-
5	1		Jo Daviess	Clinton	----	----	High	----	--	--	--	37	43	22	21	CL	97	19	74	---	271	1.30	274	-
1 (3-VI&VIII)	14-2	Ind.	Gibson	Wellston	----	SIL	Low	SIL	15	61	24	--	37	23	14	CL	---	----	---	---	---	----	---	-
1 (3-VI&VIII)	27		Gibson	Elkinsville	----	L	Low	L	41	33	26	--	34	22	12	CL	---	----	---	---	---	----	---	-
1 (3-VI&VIII)	28		Gibson	Tilsa	----	L	Low	L	43	34	23	--	36	22	14	CL	---	----	---	---	---	----	---	-
1 (3-VI&VIII)	28-2		Gibson	Sharkey	----	SIL	Low	SIC	18	52	30	--	48	26	22	OH	---	----	---	---	---	----	---	-
2	1-2		Clinton	---	----	SIL	Low	SIL	40	50	10	--	33	21	12	CL	---	----	---	---	---	----	---	-
2	7		Clinton	Brooksto	----	SIL	Low	SIL	47	46	7	--	37	26	11	ML	---	----	---	---	---	----	---	-
2	8-1		Clinton	Brooksto	----	L	Low	L	43	48	9	--	33	33	22	OH	---	----	---	---	---	----	---	-
2	8-2		Clinton	---	----	SIL	Low	SIL	38	55	7	--	44	23	20	CH	---	----	---	---	---	----	---	-
2	9		Clinton	Brooksto	----	SIL	Low	SIL	44	46	10	--	40	26	14	CL	---	----	---	---	---	----	---	-
3 (3-V)	2-1		Vanderburgh	Zipp	----	SIL	Low	SIL	4	84	12	--	50	29	9	ML	---	----	---	---	---	----	---	-
3 (3-V)	2-2		Vanderburgh	Homer	----	L	Low	L	10	70	20	--	31	23	7	ML	---	----	---	---	---	----	---	-
3 (3-V)	3		Vanderburgh	Ayrshire	----	SIL	Low	SIL	4	94	2	--	29	24	5	ML	---	----	---	---	---	----	---	-
3 (3-V)	7		Vanderburgh	Zipp	----	SIL	Low	SIL	12	74	14	--	41	22	19	CL	---	----	---	---	---	----	---	-
5	1		Clay	Gibson	----	----	High	SIL	12	74	14	--	38	23	15	CL	---	----	---	---	---	----	---	-
5	3		Clay	Cory	----	SIL	Low	SIL	12	81	7	--	37	37	0	ML	---	----	---	---	---	----	---	-
5	4		Clay	Cory	----	SIL	Low	SIL	17	67	16	--	47	26	21	CL	---	----	---	---	---	----	---	-
5	5-2		Clay	Cory	----	SIL	Low	SIL	22	71	7	--	32	24	7	ML	---	----	---	---	---	----	---	-
5	5-2A		Clay	Cory	----	SIL	Low	SIL	21	68	11	--	42	27	15	CL	---	----	---	---	---	----	---	-
6	6-4		Greene	Sharkey	----	SIL	Low	SIL	21	52	27	--	63	32	31	MH	---	----	---	---	---	----	---	-
6	6-2		Greene	Sharkey	----	CL	Low	CL	32	37	31	--	47	30	17	CH	---	----	---	---	---	----	---	-
6	6-2A		Greene	Sharkey	----	L	Low	L	34	43	24	--	72	39	33	OH	---	----	---	---	---	----	---	-
6	6-7		Greene	Sharkey	----	SIL	Low	SICL	21	61	18	--	63	27	36	CH	---	----	---	---	---	----	---	-
6	6-12		Greene	McGary	----	SIL	Low	SIL	7	81	12	--	26	17	9	SC	---	----	---	---	---	----	---	-
7	2		Newton	---	----	S	Low	S	92	6	2	--	14	--	NP	SP-SM	---	----	---	---	---	----	---	-
7	4		Newton	Plainfield	----	SL	Low	SL	61	34	5	--	47	42	5	ML	---	----	---	---	---	----	---	-
7	5		Newton	Plainfield	----	SL	Low	SL	74	23	3	--	36	21	15	SC	---	----	---	---	---	----	---	-
7	12		Newton	Plainfield	----	LS	Low	LS	91	6	3	--	24	--	NP	SM	---	----	---	---	---	----	---	-
8 (8A)	A-1		Allen	Eel	----	SIL	High	SIL	63	31	7	--	18	17	1	SM	---	----	---	---	---	----	---	-
8 (8A)	A-2		Allen	Toledo	----	SIL	High	SIL	51	33	8	--	30	17	13	SC	---	----	---	---	---	----	---	--
8 (8A)	A-3		Allen	Toledo	----	LS	High	LS	81	14	5	--	--	--	NP	SM	---	----	---	---	---	----	---	-
8	A-1		Allen	Paulding	----	L	Low	L	41	46	13	--	47	27	20	CL	---	----	---	---	---	----	---	-
8	B-2		Allen	Bono	----	SIL	Low	SIL	57	34	7	--	42	26	16	OL	---	----	---	---	---	----	---	-
8	B-1		Allen	Crosby	----	L	Low	L	47	46	7	--	42	28	14	OL	---	----	---	---	---	----	---	-
8	B-2		Allen	Brookston	----	L	Low	L	43	47	10	--	43	25	18	OL	---	----	---	---	---	----	---	-
8	F-1		Allen	Bono	----	SIL	Low	SIL	26	56	18	--	41	20	21	CH	---	----	---	---	---	----	---	-
8	F-3		Allen	Wyat	----	SL	Low	SL	56	38	6	--	55	38	17	OH	---	----	---	---	---	----	---	-
8	F-4		Allen	Bono	----	L	Low	L	40	44	7	--	43	27	16	OL	---	----	---	---	---	----	---	-
8	F-5		Allen	Paulding	----	SIL	Low	SIL	23	58	19	--	50	26	24	CL	---	----	---	---	---	----	---	-
8	H-1		Allen	Nappanee	----	SIL	High	SIL	27	60	13	--	31	21	10	CL	---	----	---	---	---	----	---	-
8	H-2		Allen	Clyde	----	L	Low	L	42	48	10	--	38	23	15	CL	---	----	---	---	---	----	---	-
8	H-3		Allen	Brookston	----	L	High	L	36	44	20	--	51	24	27	CH	---	----	---	---	---	----	---	-
8	H-4		Allen	Crosby	----	SIL	High	SIL	25	63	12	--	31	21	10	CL	---	----	---	---	---	----	---	-
8	H-5		Allen	Clyde	----	SIL	Low	SIL	34	56	10	--	38	24	14	CL	---	----	---	---	---	----	---	-

(Continued)

Note: Numbers in parentheses in "Area No." column refer to unrevised area numbers recorded in original reports (reference 5).

* Questionable value, not used in analysis.

†† Data from site in arid area, not used in analysis.

‡‡ Data from high-water-table site in arid area, used in analysis.

Table B5

Air Photo-Trafficability Data

Soil Data, 0- to 12-in. Layer

Type	USDA Texture by Wt, % Sand	Silt	Clay	% Fines	USCS Atterberg Limits LL	PL	PI	Type	Dry Density lb/cu ft	MC, %	% Sat.	Depth to Water Table in.	CI	S1	M2I	Trafficability Site at High-Moisture Condition
----	--	--	--	00	21	8	13	ML	1.2	1.1	04	---	108	1.10	189	-
----	--	--	--	04	33	14	14	ML	1.2	1.1	04	---	122	0.50	61	-
----	--	--	--	09	30	23	7	ML	1.0	1.1	07	---	172	0.62	107	-
----	--	--	--	46	23	14	9	SM-SC	1.2	1.1	09	---	176	1.03	176	-
----	--	--	--	71	31	21	10	ML	1.1	1.1	13	---	212	0.73	148	-
----	--	--	--	07	21	15	6	CL	1.1	1.1	07	---	160	0.49	72	-
----	--	--	--	03	28	14	9	ML	1.2	1.1	07	---	172	0.20	28	-
----	--	--	--	03	04	19	20	ML	1.1	----	---	---	181	0.72	130	-
L	49	32	19	--	31	19	12	CL	---	----	---	---	---	----	---	-
SiL	29	54	17	--	30	20	10	CL	---	----	---	---	---	----	---	-
SiL	33	51	16	--	23	20	3	ML	---	----	---	---	---	----	---	-
SiL	30	55	15	--	30	18	12	CL	120.0*	10.0	---	---	71	0.72	51	X
SiC	12	41	47	--	44	21	23	CL	104.0	24.0	76	---	05	0.59	38	X
SL	--	--	--	40	21	14	7	SM-SC	112.5*	15.0*	---	---	193	0.81	84	X
C	33	25	42	--	71	32	39	CH	101.0*	30.0*	---	---	83	1.20	136	X
SL	53	32	15	--	35	22	13	CL	110.0	23.3	94	---	17	0.62	60	-
SL	--	--	--	41	23	13	9	MC	110.0*	16.0	47*	---	84	0.71	60	-
L	44	31	25	--	41	21	20	CL	91.5##	35.0##	91	---	421#	0.45##	191	X
LS	--	--	--	14	--	--	NP	SM	111.5##	22.0##	47	---	1301#	0.54##	1,151	X
L	44	31	25	--	31	22	11	CL	---	----	---	---	---	----	---	-
SL	--	--	--	38	24	15	9	SM-SC	97.5	16.0	54	---	115	0.50	23	-
SL	--	--	--	47	43	23	19	SM	---	----	---	---	---	----	---	-
C	8	17	71	--	57	23	27	CH	97.5	34.0	103	---	42*	0.40	85	X
LS	--	--	--	27	--	--	NP	SM	---	----	---	---	---	----	---	-
S	--	--	--	12	--	--	NP	SP-SM	111.5##	11.0##	41	---	201##	0.77##	204##	-
SL	--	--	--	41	--	--	NP	SM	104.5##	12.0##	43	---	221##	0.77##	171##	-
CL	22	43	35	--	38	16	22	CL	111.5##	12.0##	41	---	231##	0.77##	178##	X
SL	58	38	5	--	36	21	15	CL	111.5##	11.0##	41	---	221##	0.77##	170##	-
SL	63	25	12	--	23	16	7	SM	---	----	---	---	---	----	---	-
L	47	37	16	--	35	21	14	CL	104.5	----	---	---	---	----	---	-
SiL	28	51	21	--	31	19	12	CL	111.5##	11.0##	41	---	221##	0.77##	170##	-
C	22	35	43	--	77	42	35	CH	111.5##	11.0##	---	---	242*	0.77##	186##	-
LS	--	--	--	14	--	--	NP	SM	---	----	---	---	---	----	---	-
SL	--	--	--	31	--	--	NP	SM	---	----	---	---	---	----	---	-
SiL	28	64	8	--	25	19	6	ML	111.5##	11.0##	41	---	221##	0.77##	170##	-
----	--	--	--	15	--	--	NP	SM	118.5	10.0	41	---	201	0.75	151	-
----	--	--	--	36	21	14	6	SM	120.0	9.0	39	---	181	0.77	139	-
----	--	--	--	62	20	17	3	CL	112.5	14.0	57	---	221	0.77	170	-
----	--	--	--	64	28	19	9	CL	114.5	13.0	57	---	231	0.77	178	-
SL	48	48	4	--	24	17	7	ML	---	----	---	---	---	----	---	-
L	35	41	24	--	34	21	13	CL	---	----	---	---	---	----	---	-
SiL	31	53	16	--	43	20	23	CL	---	----	---	---	---	----	---	-
SiL	23	63	14	--	34	21	13	ML	---	----	---	---	---	----	---	-
SiL	21	67	12	--	38	28	10	ML	---	----	---	---	---	----	---	-
----	--	--	--	77	43	24	19	CL	---	----	---	---	---	----	---	-
SiL	15	61	24	--	37	23	14	CL	---	----	---	---	---	----	---	-
L	32	33	15	--	30	18	12	CL	---	----	---	---	---	----	---	-
L	43	34	23	--	30	22	8	CL	---	----	57*	---	---	----	---	-
SL	58	30	12	--	30	22	8	CL	---	----	---	---	---	----	---	-
SiL	42	50	8	--	31	21	10	CL	---	----	---	---	---	----	---	-
SL	47	47	6	--	27	24	3	ML	---	----	---	---	---	----	---	-
L	43	48	9	--	31	23	8	CL	---	----	---	---	---	----	---	-
SiL	38	55	7	--	31	23	8	CL	---	----	---	---	---	----	---	-
SiL	44	50	6	--	31	24	7	CL	---	----	---	---	---	----	---	-
Si	4	92	4	--	30	20	9	ML	---	----	---	---	---	----	---	-
SiL	10	78	12	--	31	23	7	ML	---	----	---	---	---	----	---	-
Si	6	94	1	--	29	27	3	ML	---	----	---	---	---	----	---	-
SiL	12	74	14	--	41	22	19	CL	---	----	---	---	---	----	---	-
SiL	12	74	14	--	31	23	8	CL	---	----	---	---	---	----	---	-
SiL	18	71	11	--	39	31	8	ML	---	----	---	---	---	----	---	-
SiL	17	67	16	--	47	24	23	CL	---	----	---	---	---	----	---	-
SiL	22	73	5	--	36	29	7	ML	---	----	---	---	---	----	---	-
SiL	20	68	12	--	42	29	13	CL	---	----	---	---	---	----	---	-
SiL	21	52	27	--	63	32	31	MH	---	----	---	---	---	----	---	-
CL	32	37	31	--	45	30	15	CH	---	----	---	---	---	----	---	-
L	31	45	24	--	37	32	5	CH	---	----	---	---	---	----	---	-
SiCL	16	55	29	--	53	27	26	CH	---	----	---	---	---	----	---	-
SL	72	20	8	--	25	21	4	OL	---	----	---	---	---	----	---	-
S	92	6	2	--	23	--	NP	SP-SM	---	----	---	---	---	----	---	-
SL	60	34	6	--	36	24	12	ML	---	----	---	---	---	----	---	-
SL	71	23	6	--	36	24	12	CL	---	----	---	---	---	----	---	-
LS	75	20	5	--	24	--	NP	SM	---	----	---	---	---	----	---	-
SL	63	30	7	--	38	31	7	SM	---	----	---	---	---	----	---	-
SL	59	33	8	--	34	27	7	SM	---	----	---	---	---	----	---	-
LS	82	14	4	--	--	--	NP	SM	---	----	---	---	---	----	---	-
L	41	46	13	--	47	27	20	CL	---	----	---	---	---	----	---	-
SL	59	34	7	--	42	26	16	CL	---	----	---	---	---	----	---	-
L	47	46	7	--	42	28	14	CL	---	----	---	---	---	----	---	-
L	43	47	10	--	43	28	15	CL	---	----	---	---	---	----	---	-
SiL	26	56	18	--	51	24	27	CH	---	----	---	---	---	----	---	-
L	38	36	26	--	53	32	21	CH	---	----	---	---	---	----	---	-
L	49	44	7	--	43	27	16	CL	---	----	---	---	---	----	---	-
SiL	23	58	19	--	50	26	24	CH	---	----	---	---	---	----	---	-
SiL	27	60	13	--	31	21	10	CL	---	----	---	---	---	----	---	-
L	42	46	12	--	38	23	15	CL	---	----	---	---	---	----	---	-
	36	44	20	--	51	24	27	CH	---	----	---	---	---	----	---	-
SiL	25	63	12	--	31	21	10	CL	---	----	---	---	---	----	---	-
SiL	34	56	10	--	38	24	14	CL	---	----	---	---	---	----	---	-

Site Environmental Data

Topographic Position	Drainage Surface	Drainage Internal	Vegetation	Land Use	Eng. Conf. Land Form
Upland upper slope	Good	---	Herbaceous	Cultivated, idle	IVA1
Bottomland flat	Poor	---	Herbaceous/some trees	Undisturbed	IVA5
Bottomland flat	Poor	---	Herbaceous/some trees	Undisturbed	IVA5
Upland ridge	Good	---	Herbaceous	Undisturbed	IVA5
Upland upper slope	Medium	---	Herbaceous	Cultivated, idle	IVA1
Upland lower slope	---	---	Herbaceous/some trees	Cultivated, idle	IVA1
Upland upper slope	Good	Good	Herbaceous	Undisturbed	IVB2
Upland lower slope	Good	---	---	---	IVB2
Upland upper slope	Good	---	Herbaceous	Undisturbed	IVA2
Upland lower slope	Medium	Poor	Herbaceous	Undisturbed	IVA2
Upland lower slope	Medium	Poor	Herbaceous	Undisturbed	IVA2
Bottomland flat	Poor	Poor	---	---	IID
Bottomland flat	Poor	Poor	---	---	IID
Terrace slope	Poor	Poor	---	---	IID
Bottomland flat	Poor	Poor	---	---	IIB1
Bottomland flat	Poor	Poor	---	Cultivated	IID
Bottomland flat	Poor	Poor	---	---	IID
Bottomland depression	Poor	Poor	---	---	II I
Bottomland depression	Poor	Poor	---	Cultivated	II I
Bottomland flat	Poor	Poor	---	---	IID
Bottomland flat	Poor	Poor	---	---	IID
Bottomland flat	Poor	Poor	---	---	IID
Bottomland flat	Poor	Poor	---	---	IID
Bottomland depression	Poor	Good	---	---	IIF
Bottomland flat	Poor	Poor	---	---	IID
Bottomland flat	Poor	Poor	---	Cultivated	IIB1
Bottomland flat	Poor	Poor	---	---	IID
Bottomland flat	Poor	Poor	---	---	IID
Bottomland flat	Poor	Poor	---	---	IID
Bottomland flat	Poor	Poor	---	---	IID
Bottomland depression	Poor	Poor	---	---	II I
Bottomland flat	Poor	Poor	---	---	IID
Bottomland flat	Poor	Poor	---	Cultivated	IID
Upland ridge	Good	Good	Herbaceous/some trees	---	IVA4
Bottomland flat	Poor	---	Herbaceous/some trees	Cultivated, idle	IVA4
Upland upper slope	Medium	---	Bare	Cultivated	IVA4
Upland lower slope	Poor	---	---	---	ID2
Terrace flat	Poor	---	---	---	IC
Terrace flat	Poor	---	---	---	IC
Upland flat	Medium	---	Herbaceous	Cultivated, idle	ID2
Upland flat	Medium	---	Herbaceous	Cultivated, idle	ID2
Upland depression	Poor	Poor	Herbaceous	Undisturbed	ID3
Terrace flat	Poor	Poor	---	Cultivated	IIC1
Terrace flat	Poor	Poor	---	Cultivated	IIC1
Terrace flat	Poor	Poor	---	Cultivated	IIC1
Terrace flat	Poor	Poor	---	Cultivated	IIC1
Upland flat	---	---	---	---	ID2
Upland depression	Poor	---	---	---	ID2
Upland depression	Poor	---	---	---	ID2
Upland flat	---	---	---	---	ID2
Upland depression	Poor	---	---	---	ID2
Bottomland flat	Poor	---	---	---	IIB1
Bottomland flat	Poor	---	---	---	IIB1
Bottomland flat	Poor	---	---	---	IIB1
Bottomland flat	Poor	---	---	---	IIB1
Upland upper slope	Good	---	Herbaceous	Cultivated, idle	ID2a
Upland lower slope	Good	---	Herbaceous	Cultivated, idle	ID2a
Upland lower slope	Good	---	Herbaceous	Cultivated, idle	ID2a
Upland flat	Good	Poor	Herbaceous	Cultivated, idle	ID2
Upland flat	Good	Poor	Herbaceous	Cultivated, idle	ID2
Terrace flat	Poor	Poor	Herbaceous	Cultivated, idle	IIC2
Terrace flat	Poor	Poor	Herbaceous	Cultivated, idle	IIC2
Terrace flat	Poor	Poor	---	Cultivated	IIC2
Terrace flat	Poor	Poor	Herbaceous	Cultivated, idle	IIC2
Terrace flat	Poor	---	Herbaceous	Cultivated, idle	IIC2
Terrace flat	Poor	---	---	---	IC
Terrace flat	Poor	---	---	---	IC
Terrace flat	Poor	---	---	---	IC
Terrace flat	Poor	---	---	---	IC
Bottomland ridge	---	---	---	---	IC
Bottomland ridge	---	---	---	---	IC
Bottomland ridge	---	---	---	---	IC
Bottomland flat	Poor	Poor	Herbaceous	Cultivated, idle	IC
Bottomland flat	Poor	Poor	Herbaceous	Cultivated, idle	IC
Bottomland flat	Poor	Poor	Herbaceous	Cultivated, idle	IC
Bottomland flat	Poor	Poor	Herbaceous	Cultivated, idle	IC
Bottomland flat	Poor	Poor	Herbaceous	Cultivated, idle	IC
Bottomland flat	Poor	Poor	Herbaceous	Cultivated, idle	IC
Bottomland flat	Poor	Poor	Herbaceous	Cultivated, idle	IC
Upland upper slope	Good	---	---	Cultivated, idle	ID3
Upland lower slope	Good	---	---	Cultivated, idle	ID3
Upland upper slope	Good	---	---	Cultivated, idle	ID3
Upland upper slope	Good	---	---	Cultivated, idle	ID3
Upland lower slope	Good	---	---	Cultivated, idle	ID3

(Continued)

(1 of 3 sheets)

l reports (reference 5).

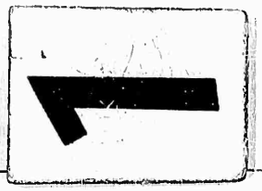

Table B5 (Continued)

Area No.	Loc.	State	County or Parish	USDA Soil Map Identification Soil Series or Association	Type	0- to 6-in. USDA Type	Topography Class	Soil Data, 6- to 12-in. Layer: USDA Type	USDA Texture by Wt, % Sand	Silt	Clay	USCS % Fines	Atterberg Limits LL	PL	PI	USCS Type	Dry Density lb/cu ft	Wet-Season Condition: MC, %	% Sat.	Depth to Water Table in.	CI	HI	RCI	Low-Topogr Site at Hig Moistu Conditi
8	I-1	Ind.	Allen	Crosby	----	SiL	High	SICL	9	63	28	--	45	18	27	CL	---	----	---	---	---	----	---	-
8	I-2		Allen	Brookston	----	SL	Low	SL	55	45	0	--	38	24	14	CL	---	----	---	---	---	----	---	-
8	I-3		Allen	Brookston	----	SiL	Low	SiL	19	58	23	--	48	22	26	CL	---	----	---	---	---	----	---	-
9	5		Tippecanoe	Genesee	----	SiL	Low	SiL	21	64	15	--	42	23	19	CL	---	----	---	---	---	----	---	-
9	6		Tippecanoe	---	----	SL	Low	SL	66	25	9	--	23	15	8	CL	---	----	---	---	---	----	---	-
9	13		Tippecanoe	Genesee	----	SiL	Low	SiL	18	73	9	--	38	26	12	ML	---	----	---	---	---	----	---	-
10	3-A		Posey	---	----	----	High	----	--	--	--	96	39	22	17	CL	95	26	93	---	152	0.61	93	-
11 (3-IV)	16		Vanderburgh	Lindside	----	SiL	Low	SiL	8	66	26	--	51	32	19	MH	---	----	---	---	---	----	---	-
12 (3-VIII)	21		Gibson	Genesee	----	SL	Low	SL	53	44	3	--	27	21	6	CL-ML	---	----	---	---	---	----	---	-
12 (3-VIII)	22		Gibson	Genesee	----	SiL	Low	SiL	18	65	17	--	44	26	18	CL	---	----	---	---	---	----	---	-
14 (3)	5-7		Gibson	Robinson	----	SiL	Low	SiL	13	72	15	--	33	20	13	CL	98	----	---	---	---	----	---	-
14 (3)	5-8A		Gibson	Waverly	----	SiL	Low	SiL	15	72	13	--	29	25	4	ML	94	----	---	---	---	----	---	-
15 (3-IX)	10-2		Vanderburgh	Waverly	----	----	Low	Si	9	80	11	--	24	22	2	ML	---	----	---	---	---	----	---	-
20	H		Brown	Muskingum-Wellston-Zanesville	----	----	High	----	--	--	--	87	30	26	6	ML	91	27	87	---	92	0.68	63	-
21	H		Dearborn	Fairmount-Lowell	----	----	Low	----	--	--	--	96	33	22	11	CL	94	26	91	---	120	0.55	66	-
21	S		Dearborn	Fairmount-Lowell	----	----	Low	----	--	--	--	97	35	24	11	ML	89	26	80	---	143	0.45	64	-
23	H		Lawrence	Hagerstown-Frederick	----	----	High	----	--	--	--	90	36	25	11	ML	93	24	81	---	252	1.05	265	-
23	L		Lawrence	Hagerstown-Frederick	----	----	Low	----	--	--	--	96	36	23	13	CL	91	27	87	---	185	0.85	157	-
24	H		Martin	Muskingum-Wellston-Zanesville	----	----	High	----	--	--	--	83	35	26	9	ML	88	25	75	---	164	0.90	148	-
24	L		Martin	Muskingum-Wellston-Zanesville	----	----	Low	----	--	--	--	89	39	24	15	CL	85	32	90	---	147	0.40	59	-
25	H		Monroe	Hagerstown-Frederick	----	----	High	----	--	--	--	82	38	31	7	ML	93	23	78	---	175	0.90	158	-
25	S		Monroe	Hagerstown-Frederick	----	----	High	----	--	--	--	87	47	26	21	CL	85	24	67	---	177	0.70	124	-
26	H		Pike	Muskingum-Wellston-Zanesville	----	----	Low	----	--	--	--	73	48	23	25	CL	96	26	95	---	112	0.73	82	X
26	L		Pike	Muskingum-Wellston-Zanesville	----	----	Low	----	--	--	--	43	33	32	8	ML	113	18	102	---	85	0.30	26	X
1 (2)	2-1	Iowa	Cerro-Gordo	Clarion	----	SiL	High	SiL	47	51	4	--	40	25	15	ML	---	----	---	---	---	----	---	-
1 (2)	2-2		Cerro-Gordo	Clarion	----	SiL	High	SiL	43	51	6	--	57	35	22	OH	---	----	---	---	---	----	---	-
4	2		Pottawattamie	Wabash	SiL	----	Low	----	--	--	--	99	36	25	11	ML	90	24	76	---	253	1.03	261	-
4	3		Pottawattamie	Marshall	SiL	----	High	----	--	--	--	98	44	25	19	CL	96	25	79	---	174	0.99	172	-
5	1		Woodbury	Knox	SiL	----	High	----	--	--	--	78	33	24	9	ML	89	18	55	---	85	1.89	161	-
5	3		Woodbury	Knox	SiL	----	Low	----	--	--	--	93	47	26	21	CL	76	28	66	---	142	1.04	148	-
1	2	Kan.	Doniphan	---	----	----	Low	----	--	--	--	97	33	24	9	ML	101	22	91	---	143	1.01	145	-
3	H		Johnson	Summit-Bates	----	----	High	----	--	--	--	92	44	13	31	CL	83	32	85	---	123	1.07	132	-
3	L		Johnson	Summit-Bates	----	----	Low	----	--	--	--	99	41	17	24	CL	102	22	94	---	127	1.07	136	-
2	H	Ky.	Meade	Hagerstown-Frederick	----	----	High	----	--	--	--	99	36	21	17	CL	97	23	86	---	158	0.53	84	-
3	H		Union	Muskingum-Wellston-Zanesville	----	----	High	----	--	--	--	99	38	29	13	CL	102	23	98	---	180	0.75	135	-
3	L		Union	Muskingum-Wellston-Zanesville	----	----	Low	----	--	--	--	99	34	23	11	CL	98	23	82	---	137	0.52	71	-
1	J-1	La.	Madison	Sharkey	----	SiL	Low	SiL	6	54	40	--	39	25	14	ML	88	----	---	---	---	----	---	-
1	J-2		Madison	Sharkey	----	SiL	Low	SiL	12	79	12	--	46	26	20	CL	---	----	---	---	---	----	---	-
1	M-1		Madison	Sharkey	----	SiL	Low	SiL	54	96	5	--	26	--	NP	ML	95	----	---	---	---	----	---	-
1	M-2		Madison	Sharkey	----	SiL	Low	SiL	28	96	16	--	72	36	36	OH	---	----	---	---	---	----	---	-
4 (3)	E-2		Lafayette	Lake Charles	----	SiL	Low	SiL	27	67	24	--	37	26	11	ML	95	----	---	---	---	----	---	-
1	L	Md.	Montgomery	Chester-Manor	----	----	High	----	--	--	--	91	32	23	9	ML	97	23	86	---	260	0.90	234	-
2	L		Prince Georges	Collington	----	----	Low	----	--	--	--	37	34	23	7	SM	75	27	59	---	141	0.40	56	-
3	H		Talbott	Sassafras	----	----	High	----	--	--	--	47	24	--	NP	SM	92	15	56	---	194	0.61	116	-
3	L		Talbott	Sassafras	----	----	Low	----	--	--	--	40	25	17	8	SM-SC	96	21	77	22	177	0.48	71	X
1	Flat		Talbott	Elkton	----	----	Low	----	--	--	--	59	42	23	19	CL	85	28	70	---	88	0.70	62	-
1	1	Mass.	Branch	Belleville-Hinckley	----	SL	High	SL	72	24	4	--	14	--	NP	SM	112.0	14.9*	105*	---	558	1.11	175	-
1	2		Branch	Belleville-Hinckley	----	SL	High	SL	62	24	14	--	26	19	5	SM-SC	112.0	14.9	82	---	156	0.53	83	-
1	3		Branch	Climax	----	SiCL	High	SiCL	24	43	33	--	43	28	15	OH	---	----	---	---	---	----	---	-
1	4		Branch	Belleville-Hinckley	----	SL	High	SL	74	15	11	--	21	16	5	SM-SC	---	17.5	---	---	160	0.39	62	-
1	5		Bucksport	Bucksport	----	SL	Low	SL	74	15	11	--	21	--	NP	SP-SM	98.6	10.6	43	---	138	1.45	200	-
3	1		Crawford	Ottawa	----	SiL	Low	SiL	14	43	43	--	37	23	14	SC	---	----	---	---	---	----	---	-
3	2		Crawford	Ipava	----	SiL	High	SiL	5	57	38	--	41	25	16	ML	---	----	---	---	---	----	---	-
4	2		Crawford	Rozetta	----	SL	Low	SL	77	15	8	--	6	--	NP	SP-SM	98.7	8.7	37	---	228	2.00	300+	-
5	1		Manistee	Pointer	SL	SL	Low	SL	72	22	6	--	17	--	NP	SM	120.5	11.8	49	---	178	0.18	32	-
5	3		Manistee	Rubicon	SL	SL	High	SL	67	25	8	--	7	--	NP	SP-SM	93.4	7.7	34	---	145	2.68	300+	-
5	4		Manistee	Antrim	SiL	SiCL	High	SiCL	24	48	28	--	47	22	25	CL	103.5	----	---	---	----	----	---	-
6	1		Berry	Pipe	SiL	SiL	Low	SiL	11	--	--	--	--	--	--	PT	80.2*	42.7	---	12-24	75	0.64	50	X
6	2		Berry	Belleville-Hinckley	SL	SL	Low	SL	73	--	--	--	17	--	NP	SM	114.2*	14.9*	112*	---	69	0.37	25	X
7	1		Rousseau	---	----	S	High	S	92	--	--	--	6	--	NP	SP-SM	92.0	----	---	---	---	----	---	-
7	2		Tisdale	Belleville-Hinckley	SL	S	High	S	77	--	--	--	7	--	NP	SP-SM	---	----	---	---	---	----	---	-
1 (12A)	A-1	Minn.	Beltrami	---	----	SiCL	High	SiCL	47	47	6	--	33	--	NP	ML	---	----	---	---	---	----	---	-
1 (12A)	A-1		Beltrami	---	----	SiL	High	SiL	93	43	4	--	18	17	1	SM	---	----	---	---	---	----	---	-
1 (12A)	A-1		Beltrami	---	----	SiL	High	SiL	97	2	1	--	30	--	NP	SM	---	----	---	---	---	----	---	-
1 (12A)	A-1		Beltrami	---	----	LS	High	LS	94	5	1	--	23	--	NP	SP-SM	---	----	---	---	---	----	---	-
3	1		Berner	---	----	SiL	High	SiL	64	24	12	--	32	22	10	SC	---	----	---	---	---	----	---	-
4	2		Aberdeen	---	----	SiL	High	SiL	51	37	12	--	41	--	NP	SM	102.7	7.0	30	---	185	1.53	283	-
5	1		Omega	Clyde	SiL	SiL	Low	SiL	34	44	22	--	23	--	NP	OL	---	----	---	---	---	----	---	-
6	2		Berger	Barnes	SL	SL	Low	SL	51	33	16	--	31	26	5	OH	---	----	---	---	---	----	---	-
7	1		Berger	Hegbert	SiL	SiL	Low	SiL	38	50	12	--	54	32	22	OH	---	----	---	---	---	----	---	-
7	2		Berger	Meehan	SL	----	High	SL	71	20	9	--	20	15	5	SC	---	----	---	---	---	----	---	-
8	4		Wilson	---	----	S	High	S	94	--	--	--	5	--	NP	SP-SM	---	----	---	---	---	----	---	-
1 (1-B)	B	Miss.	Bolivar	Sharkey	----	SiL	Low	SiL	14	77	10	--	37	20	17	CL	---	----	---	---	---	----	---	-
2 (1-C)	C		Washington	Sharkey	----	SiL	Low	SiL	22	64	14	--	50	40	10	MH	---	----	---	---	---	----	---	-
7 (1-F)	F		Bolivar	Sharkey	----	SiL	Low	SiL	18	68	14	--	42	26	16	CL	---	----	---	---	---	----	---	-
2 (1-D)	D-1	Mo.	Scott	Sharkey	----	SL	Low	SL	61	36	3	--	60	43	17	OH	---	----	---	---	---	----	---	-
2 (1-D)	D-2		Scott	Sharkey	----	SL	Low	SL	72	23	5	--	41	25	16	SC	---	----	---	---	---	----	---	-
4 (2)	A-1		Mississippi	Sharkey	----	L	Low	L	35	44	21	--	57	31	26	OH	70	----	---	---	---	----	---	-
4 (2)	C		Mississippi	Sharkey	----	SiL	Low	SiL	60	36	4	--	27	17	10	CL	---	----	---	---	---	----	---	-
5	1		Saline	---	----	----	High	----	--	--	--	98	39	24	15	CL	85	32	90	---	119	0.60	71	-
5	2		Saline	---	----	----	Low	----	--	--	--	93	--	--	--	OL	---	29	---	---	87	0.57	50	-
6	1		Atchinson	Marshall	SiL	----	High	----	--	--	--	97	47	24	23	CL	97	25	94	---	171	0.84	143	-
6	2		Atchinson	Wabash	SiL	----	Low	----	--	--	--	98	48	29	19	OL	83	35	---	---	117	0.62	73	-
7	H		Butler	Clarksville-Lebanon	----	----	High	----	--	--	--	95	28	23	6	CL-ML	93	24	81	---	102	0.45	46	-
8	L		Greene	Baxter-Lebanon	----	----	Low	----	--	--	--	99	29	20	8	CL	92	21	70	---	275	0.70	192	-
2	1	Nebr.	Buffalo	Colby	SiL	----	High	----	--	--	--	98	41	20	21	CL	92	24	80	---	161	0.82	132	-

(Continued)

* Questionable value, not used in analysis.
§ Gravelly.

Table B5 (Continued)

Soil Data, 6- to 12-in. Layer																Site Environmental Data				
	USDA Texture by Wt, %			USCS	Atterberg Limits					Wet-Season Condition: Depth to Water Table				Low-Topography Site at High-Moisture Condition		Drainage				
Type	Sand	Silt	Clay	% Fines	LL	PL	PI	Type	Dry Density lb/cu ft	MC, %	% Sat.	in.	CI	RI	RCI	Topographic Position	Surface	Internal	Vegetation	Land Use	Eng. Conf. Land Form
SiCL	9	63	28	--	45	18	27	CL	---	-----	---	---	---	-----	---	-	Upland upper slope	Good	---	---	Cultivated, idle	ID3
SL	55	45	0	--	38	24	14	CL	---	-----	---	---	---	-----	---	-	Upland lower slope	Good	---	---	Cultivated, idle	ID3
SiL	19	58	23	--	48	22	26	CL	---	-----	---	---	---	-----	---	-	Upland lower slope	Good	---	---	Cultivated, idle	ID3
SiL	21	64	15	--	42	23	19	CL	---	-----	---	---	---	-----	---	-	Bottomland flat	Poor	---	---	---	IIB1
SL	66	25	9	--	23	15	8	CL	---	-----	---	---	---	-----	---	-	Bottomland flat	Poor	---	---	---	IIB1
SiL	18	73	9	--	38	26	12	ML	---	-----	---	---	---	-----	---	-	Bottomland flat	Poor	---	---	---	IIB1
----	--	--	--	96	39	22	17	CL	95	26	93	---	152	0.61	93	-	Upland ridge	Good	---	Herbaceous	Undisturbed	IIIA1
SiL	8	66	26	--	51	32	19	MH	---	-----	---	---	---	-----	---	-	Bottomland flat	Poor	---	Corn	Cultivated	IIB1
SL	53	44	3	--	27	21	6	CL-ML	---	-----	---	---	---	-----	---	-	Bottomland flat	Poor	---	Bare	Cultivated	IIB1
SiL	18	65	17	--	44	26	18	CL	---	-----	---	---	---	-----	---	-	Bottomland flat	Poor	---	Bare	Cultivated	IIB1
SiL	13	72	15	--	33	20	13	CL	98	-----	---	---	---	-----	---	-	Terrace flat	Poor	---	Forest/understory	Undisturbed	IIC2
SiL	15	72	13	--	29	25	4	ML	94	-----	---	---	---	-----	---	-	Terrace flat	Poor	---	Forest/understory	Undisturbed	IIC2
Si	9	80	11	--	24	22	2	ML	---	-----	---	---	---	-----	---	-	Bottomland flat	Poor	---	---	---	IIB1
----	--	--	--	87	30	26	6	ML	91	27	87	---	92	0.66	63	-	Upland ridge	Good	---	Herbaceous	Undisturbed	IVA3
----	--	--	--	90	33	22	11	CL	94	26	91	---	120	0.55	66	-	Upland ridge	Good	Poor	Herbaceous/brush	Undisturbed	IVA4
----	--	--	--	97	35	24	11	ML	89	26	86	---	143	0.45	64	-	Upland upper slope	Good	Poor	Herbaceous/brush	Undisturbed	IVA4
----	--	--	--	90	36	25	11	ML	93	24	81	---	252	1.05	265	-	Upland upper slope	Good	Good	Herbaceous	Cultivated, idle	IVA1
----	--	--	--	96	36	23	13	CL	91	27	87	---	189	0.85	157	-	Upland depression	Good	Poor	Herbaceous	Cultivated, idle	IVA1
----	--	--	--	83	35	26	9	ML	88	25	75	---	164	0.76	146	-	Upland upper slope	Good	---	Herbaceous	Cultivated, idle	IVA4
----	--	--	--	89	39	24	15	CL	85	32	90	---	147	0.48	99	-	Upland lower slope	---	---	Herbaceou	Cultivated, idle	IVA4
----	--	--	--	82	38	31	7	ML	93	23	79	---	175	0.79	138	-	Upland upper slope	Good	Good	Herbaceous	Undisturbed	IVA1
----	--	--	--	97	47	26	21	CL	85	24	67	---	177	0.72	124	-	Upland slope	Good	Good	Herbaceous	Undisturbed	IVA1
----	--	--	--	93	48	23	25	CL	96	26	95	---	112	0.73	82	X	Upland upper slope	Good	Poor	Herbaceous	Undisturbed	IVA5
----	--	--	--	93	33	31	2	ML	113	[illegible]	102	---	55	0.52	29	X	Upland lower slope	Good	Poor	Herbaceous	Undisturbed	IVA5
SiL	45	51	4	--	40	23	13	ML	---	-----	---	---	---	-----	---	-	Upland flat	Poor	---	---	---	ID2
SiL	43	51	6	--	57	35	22	OH	---	-----	---	---	---	-----	---	-	Upland depression	Poor	---	---	---	ID2
----	--	--	--	99	36	25	11	ML	90	[illegible]	76	-	253	1.03	261	-	Upland lower slope	Good	Medium	Herbaceous	Undisturbed	VF
----	--	--	--	98	44	25	19	CL	90	25	74	---	174	0.77	172	-	Upland upper slope	Good	Medium	Wheat	Cultivated	IIIA1
----	--	--	--	95	33	24	9	ML	99	18	[illegible]	---	85	1.84	161	-	Upland ridge	Good	Medium	Herbaceous	Undisturbed	IIIA1
----	--	--	--	93	47	26	21	CL	79	28	69	---	142	1.04	148	-	Upland lower slope	Good	---	Herbaceous	Undisturbed	VF
----	--	--	--	97	33	24	9	ML	103	12	72	---	143	1.01	145	-	Upland lower slope	Good	---	Herbaceous	Undisturbed	VF
----	--	--	--	92	44	13	31	CL	93	12	85	---	123	1.07	132	-	Upland upper slope	Good	---	Herbaceous	Cultivated, idle	IVA4
----	--	--	--	90	41	17	24	CL	102	22	94	---	127	1.07	137	-	Upland lower slope	---	---	Herbaceous	Cultivated, idle	IVA4
----	--	--	--	99	36	21	17	CL	97	23	86	---	155	.85	84	-	Upland upper slope	Good	Good	Herbaceous	Cultivated, idle	IVA1
----	--	--	--	99	36	23	13	CL	102	23	98	---	186	0.75	139	-	Upland upper slope	Good	---	Herbaceous	Undisturbed	IVA3
----	--	--	--	99	33	23	10	CL	98	23	82	---	137	.82	71	-	Upland lower slope	Good	---	Herbaceous	Undisturbed	IVA3
Si	6	84	10	--	39	25	14	ML	86	-----	---	---	---	-----	---	-	Bottomland flat	Poor	---	---	---	IIB1
SiL	12	76	12	--	40	20	20	CL	---	-----	---	---	---	-----	---	-	Bottomland flat	Poor	---	---	---	IIB1
SiL	39	56	5	--	26	--	NP	ML	93	-----	---	---	---	-----	---	-	Bottomland flat	Poor	---	---	---	IIB1
SiL	26	56	18	--	70	38	32	OH	---	-----	---	---	---	-----	---	-	Bottomland flat	Poor	Poor	---	---	IIB1
SiL	19	67	14	--	37	26	11	ML	98	-----	---	---	---	-----	---	-	Terrace flat	Poor	Poor	Rice paddy	Cultivated	IIC3
----	--	--	--	91	32	23	9	ML	97	25	90	---	200	0.70	230	-	Upland lower slope	Good	Good	Herbaceous	Grazing	IVB2
----	--	--	--	37	34	25	9	SM	75	27	57	---	141	0.41	58	-	Terrace flat	Poor	Poor	Herbaceous	Cultivated, idle	IIB1
----	--	--	--	47	14	--	NP	SM	92	19	50	---	108	0.62	126	-	Terrace flat	Poor	Good	Bare	Cultivated	IIC3
----	--	--	--	48	23	17	6	SM-SC	98	21	77	22	171	0.48	82	X	Terrace depression	Poor	Good	---	---	IIC3
----	--	--	--	--	35	22	13	CL	86	23	74	---	98	.87	86	-	Terrace flat	Poor	Poor	Bare	Cultivated	IIC3
SL	72	22	6	--	16	--	NP	SM	112	10.9*	1.8*	---	136	0.81	110	-	Upland flat	Poor	Good	Bare	Cultivated	ID1
SL	60	24	16	--	20	13	7	SM-SC	112	14.1*	4*	---	170	0.83	93	-	Upland flat	Poor	Good	Bare	Cultivated	ID1
SiL	14	63	23	--	53	33	20	OH	---	-----	---	---	---	-----	---	-	Upland depression	Poor	Poor	Forest, hardwood	Undisturbed	ID3
SL	63	25	12	--	26	22	4	SM-SC	---	11.5*	---	---	170	0.65	110	-	Upland ridge	Poor	Medium	---	Cultivated, idle	ID3
S	--	--	--	10	--	--	NP	SP-SM	98.0	10.0	45	---	137	.44	60	-	Upland upper slope	Medium	Good	Forest, hardwood	Undisturbed	ID3
SL	64	21	16	--	37	23	14	SC	---	-----	---	---	---	-----	---	-	Bottomland flat	Poor	Poor	Forest/understory	Undisturbed	IIB1
L	37	47	16	--	41	25	16	ML	---	-----	---	---	---	-----	---	-	Upland lower slope	Poor	Good	Bare	Cultivated	ID3
S	--	--	--	6	--	--	NP	SP-SM	98.7	3.7	37	---	227	0.44	99	-	Upland flat	Medium	Good	Herbaceous	Undisturbed	ID1
LS	--	--	--	17	--	--	NP	SM	100.9	11.8	41	---	179	0.82	94	-	Terrace flat	Poor	Good	Herbaceous	Undisturbed	IIC1
S	--	--	--	6	--	--	NP	SP-SM	98.4	5.7	35	---	214	0.46	100	-	Upland upper slope	Poor	Good	Herbaceous	Undisturbed	ID3
C	26	25	48	--	47	22	25	CL	100.3	-----	---	---	---	-----	---	-	Upland ridge	Poor	Good	Herbaceous	Undisturbed	ID3
Pt	--	--	--	--	--	--	--	Pt	39.6*	42.1*	---	[illegible]	78	.54	[illegible]	X	Upland depression	Poor	Poor	Herbaceous	Undisturbed	IVC3
LS	--	--	--	16	--	--	NP	SM	114.2*	10.4*	22*	---	49	.67	33	X	Upland depression	Poor	Medium	Herbaceous	Undisturbed	ID3
S	--	--	--	9	--	--	NP	SP-SM	98.0	-----	---	---	---	-----	---	-	Upland ridge	Medium	Good	Trees, brush	Undisturbed	ID1
S	--	--	--	7	--	--	NP	SP-SM	---	-----	---	---	---	-----	---	-	Upland ridge	Poor	Good	Herbaceous	Undisturbed	ID4
SiL	20	77	3	--	33	--	NP	ML	---	-----	---	---	---	-----	---	-	Upland upper slope	Good	---	Herbaceous	Undisturbed	ID3
SL	55	43	4	--	18	17	1	SM	---	-----	---	---	---	-----	---	-	Upland upper slope	Good	---	Herbaceous	Undisturbed	ID3
LS	76	20	4	--	20	--	NP	SM	---	-----	---	---	---	-----	---	-	Upland upper slope	Good	---	Herbaceous	Undisturbed	ID3
S	69	8	3	--	18	--	NP	SP-SM	---	-----	---	---	---	-----	---	-	Upland upper slope	Good	---	Herbaceous	Undisturbed	ID3
SL	69	24	7	--	32	22	10	SC	---	-----	---	---	---	-----	---	-	Upland ridge	Poor	Good	Herbaceous	Cultivated, idle	ID3
S	--	--	--	13	--	--	NP	SM	102.7	7.0	9	---	139	.43	60	-	Upland ridge	Poor	Good	Herbaceous	Cultivated, idle	ID3
SiL	31	54	15	--	23	--	NP	CL	---	-----	---	---	---	-----	---	-	Upland depress. n	Poor	Poor	Herbaceous	Undisturbed	ID3
L	35	39	26	--	37	16	21	OH	---	-----	---	---	---	-----	---	-	Upland flat	Poor	Poor	Bare	Cultivated	ID2
SiL	36	50	12	--	34	32	22	OH	---	-----	---	---	---	-----	---	-	Upland depress. n	Poor	Poor	bare	Cultivated	ID1
SL	52	36	14	--	26	15	5	SC	---	-----	---	---	---	-----	---	-	Upland flat	Poor	Good	Bare	Cultivated	ID1
S	--	--	--	8	--	--	NP	SP-SM	---	-----	---	---	---	-----	---	-	Terrace flat	Poor	Good	Herbaceous	Undisturbed	IC
SiL	24	57	19	--	37	20	17	CL	---	-----	---	---	---	-----	---	-	Bottomland flat	Poor	Poor	---	---	IIB1
SiL	21	65	14	--	36	40	17	MH	---	-----	---	---	---	-----	---	-	Bottomland flat	Poor	Poor	---	---	IIB1
SiL	18	68	14	--	42	26	16	CL	---	-----	---	---	---	-----	---	-	Bottomland flat	Poor	Poor	Bare	Cultivated	IIB1
SL	61	30	9	--	60	43	17	OH	---	-----	---	---	---	-----	---	-	Terrace flat	Poor	Poor	---	---	IIC1
SL	72	20	8	--	41	25	16	SC	---	-----	---	--	---	-----	---	-	Terrace flat	Poor	Poor	---	---	IIC1
L	35	44	21	--	57	31	26	OH	70	-----	---	---	---	-----	---	-	Terrace flat	Poor	Poor	Bare	Cultivated	IIC1
SL	66	25	9	--	27	17	10	CL	---	-----	---	---	---	-----	---	-	Terrace flat	Poor	Poor	Bare	Cultivated	IIC1
----	--	--	--	98	39	24	15	CL	85	32	90	---	119	0.60	71	-	Upland upper slope	Good	---	Herbaceous	Grazed	IIIA1
----	--	--	--	93	--	--	--	OL	---	29	---	---	87	0.57	50	-	Upland lower slope	Good	Poor	Herbaceous	Undisturbed	VF
----	--	--	--	97	47	24	23	CL	97	25	74	---	171	0.84	143	-	Upland upper slope	Good	Good	Alfalfa	Cultivated	IIIA1
----	--	--	--	98	48	29	19	OL	83	35	---	---	117	0.62	73	-	Upland lower slope	Poor	---	Herbaceous	Grazed	IIIA1
----	--	--	--	95	28	23	6	CL-ML	93	24	81	---	192	0.45	86	-	Upland upper slope	Medium	---	Herbaceous/trees	Undisturbed	IVA1 or 2
----	--	--	--	99	29	20	8	CL	92	21	78	---	270	0.70	192	-	Upland depression	Poor	Good	Herbaceous	Cultivated, idle	IVA1
----	--	--	--	98	41	20	21	CL	92	24	80	---	.61	.82	132	-	Upland ridge	Good	---	Herbaceous	Undisturbed	IIIA1

(Continued)

Table B5 (Concluded)

Area No.	Site No.	Location: State	Location: County or Parish	USDA Soil Map Identification: Soil Series or Association	USDA Soil Map Identification: Type	0- to 6-in. USDA Type	Topography Class	Soil Data, 6- to 12-in. Layer: USDA Texture by Wt, % Type	Sand	Silt	Clay	USCS: % Fines	Atterberg Limits: LL	PL	PI	USCS Type	Dry Density lb/cu ft	Wet-Season Condition: MC, %	% Sat.	Depth to Water Table in.	CI	Rl	RCI	Low Topogr Site at Hi Moist Condit
2	2	Nebr.	Buffalo	Colby	SiL	----	Low	----	--	--	--	95	37	21	16	CL	94	24	84	---	145	0.61	88	-
3	2		Kearney	---	----	----	High	----	--	--	--	18	--	--	NP	SM	98	5	<30	---	193	1.15	222	-
4	1		Lincoln	---	----	----	High	----	--	--	--	10	--	--	NP	SP-SM	104	3	<30	---	256	1.21	300+	-
5	1		Lincoln	Holdrege	SL	----	High	----	--	--	--	41	--	--	NP	SM	93	14	48	---	253	1.40	300+	-
7	3		Madison	Valentine	S	----	Low	----	--	--	--	23	--	--	NP	SM	101	20	83	12+	100	0.55	55	X
1	1	Nev.	Washoe	---	----	L	Low	L	44	35	21	--	58	30	28	MH	57.3††	63.0††	88	---	48††	0.41††	18††	X
1	2		Washoe	---	----	C	Low	C	20	24	56	--	72	32	40	CH	52.5††	64.3††	79	---	166††	1.17††	193††	-
1	3		Lyon	---	----	CL	Low	CL	33	33	34	--	48	31	17	ML	---	----	---	---	---	----	---	-
1 (15)	6-1	N. Dak.	Nelson	---	----	----	High	SL	61	31	8	--	39	26	13	ML	---	----	---	---	---	----	---	-
1 (15)	7-1		Benson	---	----	----	High	SL	53	38	9	--	48	22	26	CL	---	----	---	---	---	----	---	-
1 (15)	7-3		Benson	---	----	L	Low	L	43	47	10	--	59	39	20	OH	---	----	---	---	---	----	---	-
2 (16)	5-2		Nelson	---	----	----	Low	L	49	34	17	--	31	18	13	CL	---	----	---	---	---	----	---	-
2 (16)	5-3		Nelson	---	----	SL	High	SL	54	41	5	--	45	26	19	CL	---	----	---	---	---	----	---	-
3 (17-A)	6-1		Ward	---	----	L	Low	L	44	48	8	--	59	39	20	OH	---	----	---	---	---	----	---	-
3 (17-A)	6-2		Ward	---	----	L	High	L	49	42	9	--	36	21	15	CL	---	----	---	---	---	----	---	-
4 (17-B)	1-2		Ward	---	----	SiL	Low	SiL	44	51	5	--	43	27	16	OL	---	----	---	---	---	----	---	-
4 (17-B)	1-3		Ward	---	----	SiL	Low	SiL	43	53	4	--	36	20	18	CL	---	----	---	---	---	----	---	-
4 (17-B)	2-1		Ward	---	----	SL	Low	SL	57	38	5	--	34	18	16	CL	---	----	---	---	---	----	---	-
5 (13-B)	1-1		Grand Forks	---	----	----	Low	SiL	20	71	9	--	36	24	12	CL	---	----	---	---	---	----	---	-
5 (13-B)	1-2		Grand Forks	---	----	SiL	Low	SiL	22	72	6	--	50	41	9	MH	---	----	---	---	---	----	---	-
6 (13-A)	2-2		Grand Forks	---	----	SL	Low	SL	66	27	7	--	27	17	10	SC	---	----	---	---	---	----	---	-
6 (13-A)	3-1		Grand Forks	---	----	LS	High	S	96	10	2	--	24	19	5	SM-SC	---	----	---	---	---	----	---	-
6 (13-A)	3-2		Grand Forks	---	----	SL	Low	SL	62	35	3	--	30	26	10	SM	---	----	---	---	---	----	---	-
7 (14)	7-2		Cass	---	----	----	Low	SL	63	32	5	--	60	40	20	OH	---	----	---	---	---	----	---	-
8 (18-A)	1-1		Burleigh	---	----	L	High	SiL	27	56	17	--	69	30	39	CH	---	----	---	---	---	----	---	-
8 (18-A)	1-2		Burleigh	Tonawanda	----	SiL	Low	SiL	35	61	4	--	45	30	15	OL	---	----	---	---	---	----	---	-
9 (18-B)	3-1		Burleigh	---	----	SiL	Low	SiL	38	56	6	--	35	23	12	CL	---	----	---	---	---	----	---	-
9 (18-B)	3-3		Burleigh	---	----	L	Low	L	39	48	13	--	56	25	31	CH	---	----	---	---	---	----	---	-
12	1		Barnes	---	----	----	Low	----	--	--	--	--	66	41	25	OH	66.4	42.2	94	---	116	0.82	94	-
12	2		Barnes	---	----	SL	High	SL	68	19	13	--	26	19	7	SM-SC	---	----	---	---	---	----	---	-
13	1		Nelson	---	----	L	Low	L	38	38	24	--	63	33	30	OH	---	----	---	---	---	----	---	-
13	2		Nelson	Barnes	SL	SL	High	SL	61	26	13	--	41	26	15	OL	---	----	---	---	---	----	---	-
14	1		Benson	---	----	C	Low	C	17	37	46	--	62	25	37	OH	---	----	---	---	---	----	---	-
14	2		Benson	Barnes	L	C	Low	C	36	17	47	--	44	26	18	CL	---	----	---	---	---	----	---	-
15	1		Ward	---	----	L	Low	L	41	42	17	--	52	40	12	OH	84.3*	57.6*	---	---	145	0.32	46	X
15	2		Ward	Kearney	L	L	Low	L	50	30	20	--	34	17	17	CL	---	----	---	---	---	----	---	-
1 (24)	1-1	Kans.	Sherman	Alexandria	----	S.L	Low	S.L	19	74	7	--	40	32	8	ML	---	----	---	---	---	----	---	-
1 (24)	1-2		Sherman	Alexandria	----	S.L	High	S.L	24	54	22	--	38	22	16	CL	---	----	---	---	---	----	---	-
1 (24)	1-3		Sherman	Chardon	----	L	High	L	33	44	23	--	51	21	10	CL	---	----	---	---	---	----	---	-
1 (24)	2-1		Sherman	Chardon	----	SiL	Low	SiL	58	34	8	--	33	22	11	CL	---	----	---	---	---	----	---	-
1 (24)	2-2		Sherman	Bernardston	----	SiL	High	SiL	32	51	17	--	30	20	10	CL	---	----	---	---	---	----	---	-
1 (24)	2-3		Sherman	Bernardston	----	SiL	High	SiL	26	61	13	--	34	28	6	ML	---	----	---	---	---	----	---	-
2 (25)	3		Fulton	Bernardston	----	SL	High	SL	63	32	5	--	44	30	14	OL	---	----	---	---	---	----	---	-
3 (23)	1-2		Franklin	Bernardston	----	SiL	Low	SiL	24	63	13	--	43	24	19	OL	---	----	---	---	---	----	---	-
4 (25-A)	2		Fulton	Tidal	----	SiL	Low	SiL	25	72	3	--	33	26	7	ML	---	----	---	---	---	----	---	-
4 (25-A)	3		Fulton	Tidal	----	SiL	Low	SiL	27	54	19	--	40	21	19	CL	---	----	---	---	---	----	---	-
4 (25-C)	2		Lenawee	Tidal	----	SiL	Low	SiL	31	55	14	--	53	24	29	CH	---	----	---	---	---	----	---	-
4 (25-C)	3		Lenawee	Tidal	----	SiL	Low	SiL	36	47	17	--	44	23	21	CL	---	----	---	---	---	----	---	-
4 (25-B)	1		Lenawee	Tidal	----	SiL	Low	SiL	43	44	13	--	53	31	22	OH	---	----	---	---	---	----	---	-
5 (26)	1-A		Miami	Miami	----	SiL	Low	SiL	33	53	14	--	27	24	3	ML	---	----	---	---	---	----	---	-
5 (26)	1-B		Miami	Miami	----	L	Low	L	43	37	20	--	47	33	14	CL	---	----	---	---	---	----	---	-
6 (27)	1-1		Pottawattamie	---	----	SiL	Low	SiL	21	72	7	--	43	34	9	ML	---	----	---	---	---	----	---	-
6 (27)	1-2		Pottawattamie	---	----	SiL	Low	SiL	24	57	19	--	37	22	15	CL	---	----	---	---	---	----	---	-
*	*		Monona	Monona [illegible]	----	----	Low	----	--	--	--	95	39	24	15	ML	93	19	94	---	158	0.52	82	-
*	*		Monona	Monona [illegible]	----	----	Low	----	--	--	--	91	39	24	15	CL	96	23	94	---	158	0.52	82	-
*	*		[illegible]

Table B5 (Concluded)

Soil Data, 6- to 12-in. Layer																							
	USDA Texture by Wt, %			USCS Atterberg Limits				Dry Density	Wet-Season Condition						Low-Topography Site at High-Moisture	Site Environmental Data					Eng. Conf.
											Depth to Water Table					Topographic	Drainage				
Type	Sand	Silt	Clay	% Fines	LL	PL	PI	Type	lb/cu ft	MC, %	% Sat.	in.	CI	RI	RCI	Condition	Position	Surface	Internal	Vegetation	Land Use	Land Form
----	--	--	--	95	37	21	16	CL	94	24	84	---	145	0.61	88	-	Upland lower slope	Good	Poor	Herbaceous	Undisturbed	VF
----	--	--	--	18	--	--	NP	SM	98	5	<30	---	193	1.15	222	-	Upland depression	Poor	Good	Herbaceous	Grazing	IIIB
----	--	--	--	10	--	--	NP	GP-SM	134	3	<30	---	256	1.21	300+	-	Upland upper slope	Poor	Good	Herbaceous	Grazing	IIIB
----	--	--	--	41	--	--	NP	SM	93	14	48	---	253	1.40	300+	-	Upland upper slope	Good	Good	Herbaceous	Cultivated, Idle	IIIA1
----	--	--	--	23	--	--	NP	SM	101	20	83	12±	100	0.55	55	X	Upland depression	Poor	Poor	Herbaceous	Grazing	IIIB
L	44	35	21	--	38	30	28	MH	57.3††	63.0††	88	---	48††	0.41††	19††	X	Bottomland depression	Poor	Poor	---	---	II I
C	20	24	56	--	72	32	40	CH	62.5††	44.3††	79	---	186††	1.17††	193††	-	Bottomland depression	Poor	Poor	---	---	II I
CL	33	33	34	--	48	31	17	ML	---	---	---	---	---	---	---	-	Bottomland depression	Poor	Poor	---	---	II I
SL	61	31	8	--	39	26	13	ML	---	---	---	---	---	---	---	-	Bottomland upper slope	Poor	Good	---	---	IID2
SL	53	38	9	--	48	22	26	CL	---	---	---	---	---	---	---	-	Upland upper slope	Poor	Medium	---	---	IID2
L	43	47	10	--	59	37	20	OH	---	---	---	---	---	---	---	-	Upland depression	Poor	Poor	---	---	IID2
L	49	34	17	--	31	18	13	CL	---	---	---	---	---	---	---	-	Upland lower slope	Poor	---	Herbaceous	Cultivated, Idle	IID3
SL	54	41	5	--	45	26	19	CL	---	---	---	---	---	---	---	-	Upland upper slope	Poor	---	Herbaceous	Cultivated, Idle	IID3
L	44	48	8	--	59	39	20	OH	---	---	---	---	---	---	---	-	Upland lower slope	Poor	---	---	---	IID3
L	49	42	9	--	36	21	15	CL	---	---	---	---	---	---	---	-	Upland upper slope	Poor	---	---	---	IID3
SiL	44	51	5	--	43	27	16	OL	---	---	---	---	---	---	---	-	Bottomland flat	Poor	---	---	---	IC
SiL	43	53	4	--	38	20	18	CL	---	---	---	---	---	---	---	-	Bottomland flat	Poor	---	---	---	IC
SL	57	38	5	--	34	18	16	CL	---	---	---	---	---	---	---	-	Bottomland flat	Poor	---	---	---	IC
SiL	20	71	9	--	36	24	12	CL	---	---	---	---	---	---	---	-	Bottomland flat	Poor	Poor	---	---	IC
SiL	22	72	6	--	50	41	9	MH	---	---	---	---	---	---	---	-	Bottomland flat	Poor	Poor	Herbaceous	Cultivated, Idle	IC
SL	66	27	7	--	27	17	10	SC	---	---	---	---	---	---	---	-	Bottomland depression	---	---	---	Undisturbed	IC
S	88	10	2	--	24	19	5	SM-SC	---	---	---	---	---	---	---	-	Bottomland ridge	Good	Good	Herbaceous	Undisturbed	IC
SL	62	33	5	--	30	20	10	SM	---	---	---	---	---	---	---	-	Bottomland ridge	Good	Good	Herbaceous	Undisturbed	IC
SL	63	32	5	--	60	40	20	OH	---	---	---	---	---	---	---	-	Bottomland flat	Poor	---	Herbaceous	Cultivated, Idle	IC
SiL	27	56	17	--	69	36	33	OH	---	---	---	---	---	---	---	-	Upland upper slope	Good	---	Herbaceous	Grazed	IID3
SiL	35	61	4	--	43	36	15	OL	---	---	---	---	---	---	---	-	Upland lower slope	Good	---	Herbaceous	Grazed	IID3
SiL	38	56	6	--	35	23	12	CL	---	---	---	---	---	---	---	-	Terrace flat	Poor	---	Wheat	Cultivated	IIC1
L	39	48	13	--	56	25	31	CH	---	---	---	---	---	---	---	-	Terrace flat	Poor	---	Wheat	Cultivated	IIC1
----	--	--	--	--	66	41	25	OH	68.4	42.7	97	---	151	1.02	99	-	Upland depression	Poor	Poor	Bare	Cultivated	IID3
SL	68	19	13	--	26	14	7	SM-SC	---	---	---	---	---	---	---	-	Upland upper slope	Poor	Good	Bare	Cultivated	IID3
L	38	38	24	--	63	33	30	OH	---	---	---	---	---	---	---	-	Upland depression	Poor	Poor	Bare	Cultivated	IID2
SL	61	26	13	--	41	26	15	CL	---	---	---	---	---	---	---	-	Upland flat	Poor	Good	Bare	Cultivated	IID2
C	17	37	46	--	62	25	37	CH	---	---	---	---	---	---	---	-	Upland flat	Poor	Poor	Herbaceous	Undisturbed	IID2
C	36	15	49	--	44	26	18	CL	---	---	---	---	---	---	---	-	Upland flat	Poor	Poor	Herbaceous	Cultivated, Idle	IID2
L	41	42	17	--	52	40	12	OH	54.3*	37.0*	---	---	124	1.32	46	X	Upland depression	Medium	Poor	Herbaceous	Undisturbed	IID2
L	50	30	20	--	34	17	17	CL	---	---	---	---	---	---	---	-	Upland flat	Medium	Poor	Herbaceous	Cultivated, Idle	IID2
SiL	19	74	7	--	40	32	8	ML	---	---	---	---	---	---	---	-	Upland depression	Poor	---	---	---	IID2
SiL	24	54	22	--	39	22	16	CL	---	---	---	---	---	---	---	-	Upland upper slope	Medium	---	---	---	IID2
L	33	44	23	--	32	21	11	CL	---	---	---	---	---	---	---	-	Upland upper slope	---	---	---	---	IID2
SiL	25	54	21	--	33	22	11	CL	---	---	---	---	---	---	---	-	Upland depression	---	---	---	---	IID2
SiL	33	51	16	--	3	20	11	CL	---	---	---	---	---	---	---	-	Upland upper slope	---	---	---	---	IID2
SiL	22	65	13	--	34	20	14	ML	---	---	---	---	---	---	---	-	Upland slope	---	---	---	---	IID2
SL	58	42	-	--	44	31	13	CL	---	---	---	---	---	---	---	-	Upland flat	---	---	---	---	IID2
SiL	34	55	11	--	41	27	14	ML	---	---	---	---	---	---	---	-	Upland depression	Poor	Poor	---	---	IID2
SiL	18	72	10	--	33	26	7	ML	---	---	---	---	---	---	---	-	Bottomland flat	Poor	Poor	---	---	IC
SiL	26	54	20	--	40	27	13	CL	---	---	---	---	---	---	---	-	Bottomland flat	Poor	Poor	---	---	IC
SiL	31	53	16	--	43	24	19	CH	---	---	---	---	---	---	---	-	Bottomland flat	Poor	Poor	---	---	IC
SiL	32	52	16	--	41	28	13	CL	---	---	---	---	---	---	---	-	Bottomland flat	Poor	Poor	---	---	IC
SiL	25	62	13	--	43	32	11	CL	---	---	---	---	---	---	---	-	Bottomland flat	Poor	Poor	---	---	IC
SiL	33	53	14	--	41	24	17	ML	---	---	---	---	---	---	---	-	Terrace flat	Poor	---	---	---	IIC1
L	47	40	13	--	41	25	16	CL	---	---	---	---	---	---	---	-	Terrace flat	Poor	---	---	---	IIC1
SiL	6	73	21	--	47	34	13	ML	---	---	---	---	---	---	---	-	Terrace flat	Poor	---	---	---	IIC1
L	46	37	17	--	31	22	9	CL	---	---	---	---	---	---	---	-	Terrace flat	Poor	---	---	---	IIC1
----	--	--	--	43	3	24	11	ML	92	9	---	---	24	.4	9	-	Upland upper slope	Poor	---	Herbaceous	Undisturbed	IVA5
----	--	--	--	33	3	24	11	CL	97	9	94	---	30	.4	12	-	Upland upper slope	---	---	Herbaceous	Grazed	IVA5
----	--	--	--	48	3	24	11	CL	91	11	93	---	47	.4	19	-	Upland upper slope	Poor	Poor	Herbaceous	Undisturbed	IVA4
----	--	--	--	43	3	24	11	ML	92	10	94	---	41	.4	16	X	Upland upper slope	Medium	Poor	Herbaceous	Cultivated, Idle	IVA2
----	--	--	--	47	3	24	11	ML	91	11	93	---	47	.4	19	-	Upland upper slope	---	---	Herbaceous	Cultivated, Idle	IVA5
----	--	--	--	43	3	24	11	CL	92	10	94	---	41	.4	16	-	Upland upper slope	---	---	Herbaceous	Grazed	IVA5
----	--	--	--	42	3	24	11	ML	92	10	94	---	39	.4	15	X	Upland upper slope	Poor	Poor	Herbaceous	Undisturbed	IVB3
----	--	--	--	42	3	24	11	ML	91	11	93	---	41	.4	16	-	Terrace flat	Medium	Good	Bare	Cultivated, Idle	IIC3
----	--	--	--	7	3	24	11	CL	97	9	94	---	30	.4	12	-	Terrace flat	Medium	Good	Herbaceous	Cultivated, Idle	IIC3
----	--	--	--	42	3	24	11	ML	91	11	93	---	41	.4	16	-	Bottomland depression	Poor	Poor	Herbaceous grass	Undisturbed	IIB3
SiL	4	7	89	--	43	24	19	CH	---	---	---	---	---	---	---	-	Bottomland flat	Poor	Poor	Herbaceous	Cultivated, Idle	IC
SiL	37	7	56	--	43	24	19	CH	---	---	---	---	---	---	---	-	Bottomland flat	Poor	Poor	Herbaceous	Cultivated, Idle	IC
SL	71	24	5	--	33	23	10	SM	---	---	---	---	---	---	---	-	Bottomland flat	Poor	Good	Herbaceous	Cultivated, Idle	IC
SiL	37	53	10	--	43	24	19	CH	---	---	---	---	---	---	---	-	Bottomland flat	Poor	Good	Herbaceous	Cultivated, Idle	IC
SiL	28	64	8	--	41	24	17	CL	---	---	---	---	---	---	---	-	Bottomland flat	Poor	Poor	---	---	IC
SiL	20	74	6	--	43	24	19	CH	---	---	---	---	---	---	---	-	Bottomland flat	Poor	Poor	---	---	IC
----	--	--	--	43	3	24	11	ML	92	10	94	---	41	.4	16	-	Upland upper slope	Medium	Good	---	---	IVA1
----	--	--	--	47	3	24	11	ML	91	11	93	---	47	.4	19	-	Upland upper slope	Medium	Good	Herbaceous	Cultivated, Idle	IVA1
----	--	--	--	43	3	24	11	CL	92	10	94	---	41	.4	16	-	Upland upper slope	Medium	Good	Herbaceous	---	IVA1
CL	32	15	53	--	43	24	19	CH	---	---	---	---	---	---	---	-	Upland upper slope	Medium	Good	---	---	IVA1
L	--	--	--	97	--	--	NP	SM	---	---	---	---	---	---	---	-	Bottomland flat	Medium	Good	---	---	IID
L	--	--	--	97	--	--	NP	SM	---	---	---	---	---	---	---	-	Bottomland flat	Medium	Good	---	---	IID
L	7	77	16	43	24	19	CH	---	---	---	---	---	---	---	---	-	Bottomland flat	Medium	Good	---	---	IIA
SL	--	--	--	7	33	23	10	SM	91	11	93	---	41	.4	16	-	Bottomland flat	Medium	Good	---	---	IIA
----	--	--	--	48	31	22	9	ML	92	10	94	---	43	.4	17	-	Terrace flat	Poor	---	---	Cultivated, Idle	IIC1
----	--	--	--	43	24	19	5	CL	---	---	---	---	---	---	---	X	Upland lower slope	Poor	Poor	Herbaceous	Cultivated, Idle	VF
----	--	--	--	43	24	19	5	CL	---	---	---	---	---	---	---	-	Upland lower slope	Poor	Good	---	---	IVA1
S	--	--	--	7	--	--	NP	SM	114	7	94	---	14	.4	6	-	Upland lower slope	Poor	Good	Bare	Cultivated	ID3
LC	--	--	--	43	--	--	NP	SM	114	7	94	---	14	.4	6	-	Upland flat	Poor	Good	Bare	Cultivated	ID1
SL	7	42	51	--	43	24	19	MH	---	---	---	---	---	---	---	-	Upland depression	Poor	Good	Herbaceous	Undisturbed	ID3
SiL	27	57	16	--	43	24	19	CH	---	---	---	---	---	---	---	-	Bottomland depression	Poor	Poor	Herbaceous	Cultivated, Idle	IC
SiL	6	74	20	--	43	24	19	ML	---	---	---	---	---	---	---	-	Upland upper slope	Poor	Good	Bare	Cultivated	ID3
L	34	44	22	--	43	24	19	CL	---	---	---	---	---	---	---	-	Upland upper slope	Poor	Good	Bare	Cultivated	ID3
SiL	27	57	16	--	43	24	19	CH	---	---	---	---	---	---	---	-	Upland depression	Poor	Medium	Herbaceous	Cultivated, hay	ID1
SiL	34	46	20	--	43	24	19	CL	---	---	---	---	---	---	---	-	Upland flat	Poor	Medium	Herbaceous	Cultivated, hay	ID1
CL	--	--	--	--	--	--	--	--	---	---	---	---	---	---	---	-	Upland slope	Medium	Medium	Herbaceous	Cultivated, new crop	ID3

Table B6

High-Water-Table Site Data

Site No.	Location: State	Location: County or Parish	USDA Soil Map Identification: Soil Series	USDA Soil Map Identification: Type	Topography Class	Soil Data, 6- to 12-in. Layer: USDA Texture: Type	USDA Texture by Wt, %: Sand	Silt	Clay	USCS: % Fines	Atterberg Limits: LL	PL	PI	USCS: Type	Dry Density lb/cu ft	Moisture Content, % at Atmospheric Tension: 0	0.06	at Field	% Saturation at 0-Tension MC	% Saturation at Field MC	Depth to Water Table in.	CI	RI	RCI	Strength and Moisture Content Data Used in Analysis of High-Moisture Condition
17	Miss.	Warren	Falaya	SiL	Low	SiCL	11	61	28	97	44	25	19	CL	78.7	40.42	37.94	40.02	97	96	5	59	0.78	46	-
18		Warren	Falaya	SiL	Low	SiCL	8	59	33	97	39	25	14	CL	76.8	41.66	38.51	40.94	95	94	0	46	0.65	30	X
19		Warren	Sharkey	SiL	Low	SiL	24	58	18	85	81	44	37	CH	44.9	96.24	85.92	96.78	---	---	3	32	0.48	15	X
30		Warren	Sharkey	C	Low	SiC	5	50	45	98	61	24	37	CH	78.7	40.34	40.25	---	95	---	2.5	97	0.92	89	-
33		Warren	Sharkey	C	Low	SiC	5	48	47	98	67	26	41	CH	76.2	42.92	42.43	43.04	97	97	2.5	78	0.82	64	-
40		Warren	Sharkey	C	Low	SiC	8	48	44	93	67	29	38	CH	72.4	48.64	44.59	46.48	99	95	0-2	83	0.75	62	X
31		Warren	Sharkey	C	Low	SiCL	5	58	37	99	50	23	27	CH	74.3*	53.56	50.04	52.55*	114	112*	5	39	0.58	23	X
50		Warren	Sharkey	C	Low	SiCL	7	54	39	99	54	21	33	CH	83.7	37.56	34.80	36.10	100	96	3	90	0.70	62	-
34		Warren	Sharkey	SL	Low	LS	85	8	7	22	22	--	NP	SM	85.5	31.75	25.77	30.63	80	77	1.5	105	0.60	63	X
45		Warren	Sharkey	SL	Low	LS	83	10	7	24	25	25	0	SM	85.5	32.26	27.57	29.46	92	84	4.5-5	125	----	---	-
35		Warren	Sharkey	SL	Low	SL	65	22	13	45	26	--	NP	SM	79.9	33.30	33.35	37.01	82	91	2	70	0.29	20	X
36		Warren	Sharkey	SL	Low	SiL	25	63	12	96	25	22	3	ML	---	---	---	---	---	---	3	28	0.38	11	X
38		Warren	Sharkey	SiL	Low	SiCL	6	59	35	98	52	25	27	CH	79.9	40.68	38.99	39.51	99	98	4.5	96	0.76	73	X
41		Warren	Sharkey	C	Low	SiL	9	66	25	96	62	23	39	CH	81.2	39.10	37.93	---	98	---	3	95	0.91	86	X
42	La.	Madison	Sharkey	C	Low	SL	56	33	11	66	--	--	NP	ML	96.1	27.18	24.94	27.18	100	100	0	39	----	---	-
46	Miss.	Warren	Sharkey	SL	Low	L	43	45	12	69	38	23	5	CL	83.7	37.07	34.21	33.84	101	92	5	145	----	---	-
20		Warren	Memphis	SiL	Low	SiL	15	65	20	99	41	24	17	CL	74.9	45.66	43.12	44.80	100	98	3	32	0.45	14	X
21		Warren	Memphis	SiL	Low	SiL	34	51	15	90	25	34	NP	ML	83.7	34.31	30.88	33.27	93	90	3	36	0.26	9	X
43		Warren	Memphis	SiL	Low	SiL	12	73	15	100	29	24	5	ML	90.5	30.42	27.88	29.05	97	93	2	204	0.40	82	-
44		Warren	Memphis	SiL	Low	SiL	12	71	17	100	35	24	11	ML	85.5	33.64	31.96	31.56	95	90	2	106	0.65	69	X
24		Warren	Sarpy	SL	Low	SL	76	17	7	41	23	--	NP	SM	85.5	31.08	28.37	31.34	88	90	3	76	0.21	16	X
54		Warren	Sarpy	SL	Low	SL	69	25	6	46	24	25	NP	SM	84.9	32.84	29.72	30.96	92	86	3	86	0.30	25	-
25		Warren	Sarpy	SL	Low	SL	59	34	7	60	23	--	NP	ML	85.5	30.73	26.70	31.26	87	88	3	93	1.45	135	-
26		Warren	Sarpy	SL	Low	SL	56	37	7	70	24	--	NP	ML	88.6	31.48	29.18	32.14	85	87	6	128	1.12	143	-
27		Warren	Sarpy	SL	Low	SL	47	44	7	71	25	--	NP	ML	86.2	33.14	30.58	---	95	---	1	102	0.43	44	X
28		Warren	Sarpy	SL	Low	SL	58	37	5	68	25	--	NP	ML	86.2	31.98	29.34	33.83	82	86	3.5	88	1.50	132	-
48		Warren	Sarpy	SL	Low	SL	67	27	6	52	--	--	NP	ML	87.4	31.46	29.25	31.35	95	93	0-3	88	----	---	-
39		Warren	Sarpy	SiL	Low	SiL	27	55	18	81	34	21	13	CL	82.4	36.88	33.46	---	97	---	3	73	0.59	43	X
49		Warren	Sarpy	SiL	Low	SiL	22	59	19	78	31	23	8	ML	84.9	34.52	32.16	33.80	97	94	1.5	72	0.45	32	X
52		Warren	Sarpy	CL	Low	LS	37	9	4	17	--	--	NP	SM	84.9	24.14	27.00	26.19	85	82	6	117	0.37	43	X
53		Warren	Sarpy	SL	Low	LS	56	9	5	20	--	--	NP	SM	89.3	26.66	25.33	28.77	89	90	5	136	0.32	44	-
22		Issaquena	Sharkey	C	Low	SiC	4	51	45	96	59	24	35	CH	74.3	39.60	36.50	39.60	95	95	8	136	0.83	113	X
37		Warren	Sharkey	C	Low	SiC	6	49	45	98	62	28	34	CH	---	---	---	---	95	---	8	78	0.90	70	X
23		Warren	---	----	Low	SiC	5	51	44	99	66	30	36	CH	69.9	53.34	50.60	51.72	101	99	6	53	0.69	37	X
29		Warren	---	----	Low	SiC	7	53	40	100	59	24	35	CH	66.8	56.96	47.25	---	101	---	6	56	0.76	43	-
51		Warren	Bowmre	----	Low	SiC	5	52	43	95	68	27	41	CH	78.7	44.96	40.30	39.66	97	92	6	89	0.97	86	X
47		Yazoo	Yazoo	C	Low	SiC	12	47	41	97	61	22	39	CH	84.9	36.86	35.67	35.00	101	96	5	89	1.09	97	X
55		Scott	---	----	Low	CL	44	27	29	62	31	13	18	CL	100.5	23.60	21.64	23.68	97	97	4-5	58	0.74	43	-
62		Scott	---	----	Low	CL	44	21	35	60	44	17	27	CL	86.8	36.58	34.82	35.40	108	104	1	38	0.88	33	-
64		Scott	---	----	Low	CL	44	28	28	75	45	19	26	CL	86.2	35.00	33.42	34.12	101	98	0	45	0.69	31	X
56		Scott	---	----	Low	CL	43	44	33	85	52	19	33	CH	81.9	32.16	29.76	30.61	104	99	3-6	49	0.75	36	X
60		Scott	---	----	Low	CL	57	45	18	72	29	16	13	CL	91.1	30.46	28.24	30.62	99	99	1-2	64	0.54	35	-
65		Scott	---	----	Low	CL	52	45	24	74	36	18	18	CL	87.4	33.10	31.26	32.64	98	97	0	27	0.51	14	X
63		Scott	---	----	Low	CH	34	18	48	72	74	23	51	CH	84.9	36.98	33.85	36.30	101	99	1	37	0.85	31	X
66		Scott	---	----	Low	SCL	52	20	29	53	39	16	23	CL	91.8	30.49	29.96	29.56	100	98	1	40	0.69	28	X
57		Scott	---	----	Low	SiL	33	53	14	74	25	19	6	CL	93.6	26.10	24.47	25.26	102	99	2	47	0.52	24	X
58		Scott	---	----	Low	SiL	37	51	12	71	22	16	6	CL-ML	97.4	24.04	21.85	21.64	91	81	2	75	0.31	23	X
59		Scott	---	----	Low	SiL	32	53	15	78	26	19	7	CL-ML	96.5	25.43	23.73	24.37	95	92	3	70	0.34	24	-
61		Madison	Vicksburg	L	Low	SiCL	15	52	33	79	44	20	24	CL	98.7	31.02	29.38	30.54	97	106	1-2	77	0.75	56	X
67		Newton	Ochlockonee	L	Low	SCL	52	24	24	52	21	17	NP	ML	113.6	23.07	21.78	20.96	103	93	2	136	----	---	-
68		Newton	Ochlockonee	L	Low	SL	69	23	10	48	25	18	7	SM	109.7	19.25	17.78	17.66	100	93	1	264	----	---	-
69		Newton	Ochlockonee	L	Low	SCL	61	24	25	54	35	14	21	CL	107.4	21.26	20.10	19.62	104	96	0	179	0.76	136	-
71		Newton	Ochlockonee	L	Low	SCL	53	24	23	62	31	14	17	CL	109.5	24.74	23.60	23.34	101	95	1.5	117	0.85	99	X
70		Newton	Ochlockonee	L	Low	L	43	30	27	64	38	15	23	CL	111.8	25.48	22.93	22.46	101	95	1	110	0.90	99	X
72		Newton	Ruston	SL	Low	SCL	48	22	30	75	41	20	21	CL	---	---	---	---	---	---	2	254	0.79	201	-
73		Newton	Ruston	SL	Low	SCL	55	17	28	77	41	22	19	CL	---	---	---	---	---	---	2	193	0.81	156	X
76		Newton	Ruston	SL	Low	SCL	62	14	24	74	39	21	18	CL	---	---	---	---	---	---	3	249	0.74	184	-
74		Newton	Ruston	SL	Low	SL	65	13	22	70	34	23	11	CH	---	---	---	---	---	---	2	225	0.80	180	X
75		Newton	Ruston	SL	Low	C	34	22	44	91	62	41	21	MH	---	---	---	---	---	---	2	135	1.06	143	X
32	La.	Madison	---	----	Low	SiCL	8	64	28	100	48	24	24	CL	97.4	40.20	43.65	45.96	107	101	6	47	0.82	39	X

* Questionable value, not used in analysis.

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